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1903/04

.....SOUTH DAKOTA.....
AGRICULTURAL COLLEGE

Annual Catalogue

1903-1904

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UNIVERSITY OF ILLINOIS



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Published by the College
Brookings, S. Dak., 1904

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South Dakota Agricultural College

Annual Catalogue

1903--1904

With Announcements for 1904-1905

Published by the College
Brookings, South Dakota, 1904

PART ONE

GENERAL STATEMENTS

CALENDAR FOR 1904-5.

1904. FALL TERM. TWELVE WEEKS.

September 19-21—Entrance Examinations and Registration.
September 21—Work of Fall Term Begins at Noon.
September 27—President's Annual Address to Students.
October 1—Faculty Reception to Students.
November 24-25—Thanksgiving Recess.
December 14—Fall Term Closes at Noon.

1905. WINTER TERM, TWELVE WEEKS.

January 2—Work of Winter Term Begins at Noon.
January 14—Faculty Reception to Students.
March 24—Winter Term Closes at Noon.

1905. SPRING TERM, TWELVE WEEKS.

March 27—Work of Spring Term Begins at Noon.
June 15—Work of Spring Term Ends.
June 15—
10:30 a. m., Commencement Exercises.

1905. FALL TERM.

September 20—Fall Term Begins.
December 13—Fall Term Ends.

CALENDAR OF SHORT COURSES IN 1905.

January 2 to February 10—Short Course in Agriculture.
January 2 to March 24—Course in Dairy Science. (Butter Making.)
January 2 to March 24—Public School Drawing.
January 2 to March 24—Short Course in Domestic Science.
January 2 to March 24—Horticulture. (Nurserymen's Course)
January 2 to June 15—Practical Steam Engineering.

REGENTS OF EDUCATION.

HON. M. F. GREELEY,.....Gary
HON. IVAN W. GOODNER,.....Pierre
HON. R. M. SLOCUM,.....Herreid
HON. F. A. SPAFFORD,.....Flandreau
HON. A. W. BURTT,.....Huron

OFFICERS OF THE BOARD.

HON. IVAN W. GOODNER,.....President
HON. I. D. ALDRICH,.....Secretary
HON. C. B. COLLINS, (State Treasurer).....Treasurer

REGENTS' COMMITTEE FOR THE COLLEGE.

HON. F. A. SPAFFORD. HON. R. M. SLOCUM

MR. R. A. LARSON,
Secretary and Accountant, Brookings, S. D.

FACULTY.

JAMES CHALMERS, Ph. D., D. D., LL. D., *President*, Professor of Philosophy, Economics and Sociology.

ROBERT FLOYD KERR, A. M., Librarian and Director of College Extension Work.

JAMES HENRY SHEPARD, B. S., Professor of Chemistry.

HALVOR CHRISTIAN SOLBERG, M. E., Professor of Mechanical and Steam Engineering.

ELLERY CHANNING CHILCOTT, M. S. Professor of Geology and Agronomy.

HUBERT BERTON MATHEWS, M. S., Professor of Physics and Electrical Engineering.

BOWER THOMAS WHITEHEAD, M. S., Ph. C., Professor of Pharmacy.

NIELS EBBESEN HANSEN, M. S., Professor of Horticulture and Forestry.

GEORGE LINCOLN BROWN, Ph. D., Professor of Mathematics and Astronomy.

EDWARD LOCKHART MOORE, B. S., D. V. S., Professor of Zoology and Veterinary Medicine.

ARTHUR BOONE CROSIER, Professor of Stenography and Commercial Science.

JOHN HERSEY WHEELER, A. B., Professor of Modern Languages.

ELMER KENDALL EYERLY, A. M., Professor of English and Oratory.

LUCY AMELIA DUBOIS, A. B., (Preceptress) Professor of Latin and Associate Professor of English.

*ADA BERTHA CALDWELL, Professor of Industrial Art.

ROBERT BLACKWOOD FORSEE Pe. P., Principal of Preparatory Department.

ALBERT SPENCER HARDING, A. M., Professor of History and Civics.

JAMES WILBUR WILSON, M. S. A., Professor of Agriculture and Animal Husbandry

AUSTIN BENJAMIN CRANE, M. S., Professor of Civil and Agricultural Engineering.

~~JOHN C. MCARTHUR, Capt. 28 Infantry, U. S. A., Professor of Military Science and Tactics.~~

RUTH A. WARDALL, A. B., Professor of Domestic Science.

WILLIAM ARCHIE WHEELER, M. S., Professor of Botany and Entomology.

~~J. HARRIS WERNER, B. S., Director of Athletics.~~

MAUD GODDARD, Acting Professor of Industrial Art.

Geo. D. Barnard

J. W. Hollister

INSTRUCTORS

ALBERT H. WHEATON, Instructor in Dairy Science.

HOWARD HARTMANN HOY, M. S., Instructor in Physics and Electrical Engineering.

JOHN PARMELEE MANN, Instructor in Vocal Music and Stringed Instruments, and Band Leader.

NINA WESTON, Instructor in Instrumental Music.

MAUD J. VAUGHAN, Instructor in Elocution and Physical Culture.

~~WALTER STRICKLAND THORNBER, M. S., Assistant in Botany and Horticulture.~~

~~FRANK EDGAR HEPNER, B. S., Ph. G., Assistant in Chemistry.~~

T. OSCAR EDGAR, B. S. Assistant in Zoology and Bacteriology.

HARRY G. SKINNER, B. S. A., Assistant in Agriculture and Animal Husbandry.

FRANK A. NORTON, B. S., Ph. G., Assistant in Chemistry.

JOHN NELSON, Registrar and Assistant in Mathematics,

JOHN S. COLE, B. S., Assistant in Agronomy.

Edith Thornber

OLE N. TROOIEN, B. S., Assistant in Mechanical and Steam Engineering.

J. B. STONER, Assistant in Dairying.

ROY O. WILSON, Secretary to the President.

*Away on leave of absence.

COMMITTEES

The Faculty meets regularly every Monday, during term time, at 4:15 p. m. To facilitate the work and aid the Executive in disposing of minor questions, the following committees are appointed for the current year:

COMMITTEE ON CLASSIFICATION AND COURSE OF STUDY—Chalmers, Wilson, Whitehead, Mathews, Chilcott, Hansen, Solberg, Moore, Wardall.

DEPORTMENT—Brown, Mathews, J. H. Wheeler, Eyerly, Kerr, Wilson, Whitehead, Harding, Crane, Werner.

COLLEGE EXTENSION—Kerr. Shepard, Harding, Forsee, Brown, Moore.

ATHLETIC—Werner, J. H. Wheeler, Eyerly, Mathews, W. A. Wheeler, Wilson, McArthur, Vaughan.

LIBRARY—Harding, Kerr, Eyerly, DuBois, Shepard, Forsee.

LITERARY—Crosier, J. H. Wheeler, Caldwell, Vaughan, Weston.

LIVING AFFAIRS—DuBois, Solberg, Forsee, Thornber, Wardall Wheaton.

SCIENTIFIC RESEARCH—Wilson, Chilcott, Hansen, Shepard, W. A. Wheeler, Moore.

SOCIAL AFFAIRS—Eyerly, Hansen, Caldwell, Crosier, Mann, Hoy, McArthur, Weston, Wardall.

STUDENT LABOR AND GROUNDS—Hansen, Wilson, Solberg, Crane.

STUDENT ORGANIZATIONS AND PUBLICATIONS—Mathews, Harding, Whitehead, Solberg, Kerr, Crane, Hoy, Thornber.

STATION COUNCIL AND MEETINGS.

The Station Council is composed of the Regents Committee for the College, the President of the College and heads of staff divisions.

This Council meets regulary throughout the year on the first Wednesday of each month at 4:15 p. m., and at such other times as the Director may designate.

AGRICULTURAL EXPERIMENT STATION STAFF.

James W. Wilson, Director..... *Animal Husbandry*
E. C. Chilcott, Vice Director*Agriculturalist*
James H. Shepard*Chemist*
N. E. Hansen*Horticulturist*
W. A. Wheeler*Botanist and Entomologist*
E. L. Moore*Veterinarian*

Frank E. Hepner *Assisstant in Chemistry*
A. B. Holm*Photographer and Assistant in Soil Physics*
Wm. West*Foreman Station Farm*
H. G. Skinner*Assistant in Animal Husbandry*
F. A. Norton*Assistant in Chemistry*
Sylvester Baltz.....*Superintendent Highmore Sub-Station*
Chas Haralson*Gardener and Florist*
R. A. Larson*Secretary and Accountant*
T. B. Kelley*Station Stenographer*

OTHER REGULAR EMPLOYES.

Samuel J. Wood*Engineer and Fireman*
Fred Betkey*Assistant Engineer and Fireman*
George E. Purdy*Janitor and Carpenter*
Joseph D. Grover*Assistant Janitor*
H. C. Hanson*Farm Teamster*
William Wood*Horticultural Teamster*
M. J. McCormick*Herdsman*

TUTORS.

Tutors for the several departments will be appointed and published at the opening of the new college year.

All students absent from regular college exercises will be expected to arrange with a tutor for making up omitted work. For tutor charges see Part Three—D, No. 31

COLLEGE ALUMNI

ALUMNI ASSOCIATION.

Vinal B. Valleau. '91 *President*
Halvor C. Solberg '91 *First Vice-President*
Ina May Colegrove. '99 *Second Vice-President*
George R. Wescott. '03 *Third Vice-President*
Albert S. Harding. '92 *Secretary and Treasurer*

GRADUATES.

MASTER OF SCIENCE. (M. S.)

Aldrich. John M., '91..... Prof. Entom. U. Idaho, Moscow, Io.
Brown, James A., '96..... Attorney Lincoln, Neb.
Chilcott,, E. C., '98..... Prof. Geology and Argo. S. D. A. C.
Crane, Austin B., '03.... Prof Agricultural Eng..S. D. A. C.
Davis, Homer, '91..... Physician Genoa, Neb.
Griffiths, David, '93..... Agrostologist, Agr. D't.,Washington
Harkins, Lilla A., '98.... Prof. Domestic Sci. Bozeman, Mont.
Hoy, Howard H., '03..... Asst. Phys. & El. Eng., S. D. A. C.
Knox, William, H., '01... Asst. U. S. Soil Surv., Fresno, Cal.
Luke, Fred K., '96..... Florist, Shaw Bot., G. St. Louis, Mo
Mathews, Hubert B., '99.. Prof. of Physics S. D. A. C.
Mathews, Eva
(Plocker), '94 Brookings
McKenney, Dustin W., '89. Direct. Man. Train.,Homestead, Pa.
Parsons, Thomas S., '98..Science Teacher Watertown

Robertson, Ada N., '96....Clerk Helena, Mont.
Schoppe, W. J. A., '95....Signal Service Buffalo, N. Y.
Sproul, Alex. H., '95.....Teacher Elgin, Ill.
Tanzy, Hattie
(Dibbie), '99 Matron Yankton Col.....Yankton
Thornber, Walter S., '99..Asst. in Bot. & fort...S. D. A. C.
Whitehead, Bower T., '01..Prof. of Pharmacy.....S. D. A. C.
Whitten, John C., '99.....Prof. Hort. U. Mo. .. Columbia, Mo.
Williams, Effie
(Snell), '96 Madison
Wilcox, Ernest W., '96....Teacher Thawville, Ill.
Wolgemuth, Lee E., '91..Head Draughtsman C., M., St. P., & O., Ry.....St. Paul, Minn.

BACHELOR OF SCIENCE. (B. S.)

Ainsworth, Cephas B., '97.Bank Clerk.....Estelline
Ainsworth, Howard, '98.....Baraboo, Wis.
*Aldrich, Ellen
(Roe), '89
Aldrich, Irwin D., '91....Editor and Secretay Regents of Education Big Stone
Aldrich, John M., '88.....Prof. Zool. U. of Idaho, Moscow, Io.
*Allen, Wm. C., '89.....
Allen, Hart M., '00.....Drug Clerk.....Watertown
Allison, Wm. F., '96.....Student.....Ithica, N. Y.
Almond, Fred C., '03.....Student Madison, Wis.
Anderson, Clark W., '00.....
Arnold, Katie
(Boswell) Estelline
Atkinson, Jesse C., '96....Contractor..... Zion City, Ill.

*Deceased.

Atkinson, George W., '97..Topographer Mitchell
Atkinson, Walter, '97.....Civil Engineer Zion City, Ill.
Austin, Steven E., '92....Machinist Iowa

Bagley, Susie, '01.....Teacher Chicago, Ill.
Bates, Edmund T., '93....Farmer Onslow, Iowa
Barton, Alice E., '98.....Teacher Brookings
Bacon, Nora
(Upayke), '91 Pueblo, Colo.
Beck, Milton, '93.....Machinist Saginaw, Mich.
Beck, Louis, '98 Machinist Saginaw, Mich.
Beebe, Jay L., '00.....Physician California
Bell, William D., '91.....Editor Slayton, Minn.
Bentley, William S., '91..Physician Soldiers Home, Hot Spg's
Bolles, Myrick N., '98....Instructor Col. U...New York, N. Y.
Bolles, Laura Jane, '01....Student.....Pratt Institute, N. Y.
Boyd, Mary, '01.....Teacher Brookings
Boyden, Frank E., '97....Student Chicago, Ill.
Boyden, Maude
(Hegeman), '98.....Student Chicago, Ill.
Brosseau, Jesse E., '01....Student Chicago, Ill.
Brown, Cyrus O., '94.....Attorney..... Burwell, Neb.
Brown, Ida (Dibble) '96.....Lincoln, Neb.
Brown, James, A., '94....Attorney Lincoln, Neb.
Brown, Sara, '95.....Teacher Shannon City, Ia.
Brooke, Grace
(Lawshe), '89 Telephone Operator.... Brookings
Bullen, Grace
(Young), '97..... Brookings

Carlson, Ella, '00.....Teacher Minneapolis, Minn.
Carlson, Esther, '00.....Teacher Minneapolis, Minn.
Carter, Lewis W., '96.....Farmer Highmore
Cole, John S., '03.....Special Agt. Dep't of Agriculture,
..... Brookings

Clevenger, John W., '97...Dentist Chamberlain
Colegrove, Ina May, '99...Teacher Brookings
Colegrove, Letta A., '03..Student Brookings
Cornell, Harry M., 95....Real Estate.....Willow City, N. D.
Crane, Austin B., '91.....Prof. Agr. Eng.....S. D. A. C.
Crane, Elsie
(Curtiss), '98..... Brookings..
Crane, May
(Cranston), '89..... Brookings..
Crane, Maggie
(Davidson), '98.....Spokane, Wash.
Cross, Alvah G., '89.....
Crowley, Cassie
(Madden), '97..... Aberdeen
Cuckow, Fred W., '03....Student Madison, Wis.
Culhane, Michael E., '01..Stenographer Brookings
Cunningham, Sara
(Haber), '89 Spokane, Wash.

Davies, Mary, '00.....Teacher Tecumseh, Neb.
Davies, Sara, '00.....Teacher Tecumseh, Neb.
Davis, Homer, '91.....Physician Genoa, Neb.
Davis, Samuel H., '92....Farmer Plankinton
Day, John M., '90.....Farmer Mellette
DeLa, John W. H., ...Teacher Houghton
Dillon, Willis C., '91.....Attorney Omaha
Dibble, Hettie
(Doughty), '91..... Yankton
Dodge, Fred E., '01.....Hotel Keeper Redfield
Doughty, Matthew W., '00.Electrical Eng... New York, N. Y.
Downing, Jennie C., '96..Telephone Operator..... Brookings

Edgerton, Wm. M., '93....Physician Faulkton
Egeberg, Hildus, '90.....Farmer Brookings
Else, Earl, '01.....Student Chicago, Ill.

Erickson, Martin L., '01..Inst. U. of Minn., Minneapolis,Minn
Evans, Lina Frances, '01..Student Minneapolis, Minn.
Findeis, Phillip, '99.....Merchant Mirando
Fishback, Myra, '01.....Student Wellesley, Mass.
Fjerestad, Hans C., '98...Clerk Bruce
Fleming, Michael E., '02..Teacher Minneapolis, Minn.
Fourt, Fanny
(Shannon), '91 Fairfield, Ia.
George, William A., '02 ..Student Chicago, Ill.
Grady, Francis A., '89....Attorney...Red Lake Falls, Minn.
Griffiths, David, '92.....Agrostologist, Agr. D't., Washington
Grattan, Paul H., '96.....Collector Elkton
Grove, Frank W., '00.....Student Chicago, Ill.
Haasarud, Ole H., '90....Teacher Bratsburg, Minn.
Haberlein, Alice
(Robinson), '91..... Globe, Ariz.
Hamlin, John R., Jr., '92.R. R. Clerk Arizola, Ariz.
Hann, Jay B., '91.....Farmer Carthage
Harding, Albert S., '92....Prof of History.....S. D. A. C.
Harding, Neva
(Whaley), '97..... Brookings
Harding, Charles J., '98...Teacher Bruce.
Harkins, Lilla A., '90.....Prof. Dom. Sci....Bozeman, Mont.
Hart, Bertrand M., '02....Student Chicago, Ill.
Harza, Carl, '00.....Electrician Detroit, Mich.
Harza, LeRoy Francis, '01.Asst. in Math.M.A.C.Lansing, Mich.
Hatfield, Ira H., '92.....Attorney Lincoln, Neb.
Hatton, John Henry, '01..Div. of For. Dept. Agr. Washington
Hazel, Flora
(Ainsworth), '98..... Aberdeen
Hazel, William A., '97....Real Estate Aberdeen
Hegeman, Harry A., '96..Capt. U. S. A., Ft. Leavenworth, Kan
Hegeman, Mable, I., '98...Teacher Brookings
Hepner, Frank E., '02....Asst. in Chem.....S. D. A. C.

Holm, Andrew B., '96....Asst. in Soil Physics..S. D. A. C.
Hopkins, Mrs. C. G., '94..... Champaign, Il..
Hopkins, Cyril G., '90....Prof. of Agronomy, Champaign, Ill.
Hodgeson, Herbert H., '98.U. S. Geol. Surv., Washington, D. C.
Houston, Grant, '91.....Physician Joliet, Ill.
Hoy, Nora
(Mathews), '96..... Brookings
Hoy, Howard H., '96.....Asst. Phys. & El. Eng., S. D. A. C.
Hubbard, Minnie E., '03..Teacher Brookings
Husted, Harley H., '97...Teacher Lincoln, Neb.
Irish, Henry C., '91.....Superint. Shaw Garo., St. Louis, Mo
Irish, Maggie
(Duffey), '90..... St. Louis, Mo.
Jenkins, John C., '90.....Attorney Brookings
Johnson, Rhoda Maria '01.Teacher Brookings
Johnson, Clara T., '02...Bookkeeper Brookings
Johnson, Edward, '02.....Teacher.....Toronto
Johnson, Isaac, '03.....Lumberman.....Brookings
Jolley, Wm. G., '97.....Teacher Volin
Kendall, Clinton D., '00...Druggist Brookings
Kendall, Leonard J., '01..Telegraph Operator..... Arlington
Kenyon, Arthur H., '90...Lawyer Spokane, Wash.
Keeney, Emma A., '92....Physician Minneapolis, Minn.
Kendall, M. Krete, '03....Student New York
Kennedy, C LeRoy, '01...Civ. Eng Madison
Kephart, George, '02 Editor Beresford
Knox, Wm. H., '98.....Asst. U. S. Soil Sur..Fresno, Cal.
Knox, Elinor
(Williams), '94..... Fresno, Cal.
Korstad, Hans, '89.....Editor Brookings
Korstad, Mary, '96.....Teacher Brookings
Langdon, Alice, '03.....Teacher Parker
Langdon, Lillian, '01.....Teacher Parker
Lawrence, Mary M., '99...Student Pratt In..Brooklyn, N. Y.

Eno, Durell G., '89.....Farmer Bijou Hills.
Enos, Winifred, '01.....Teacher Brookings

Lawrence, Wm. H., '99...Supt. Br. Ex. Sta., Puyallup, Wash.
Lawrence, Claude W., '98.Student Pullman, Wash.
Lawrence, Clay, '98.....Stud. Columbia U., New York, N. Y.
Lawrence, Philip A., '88..Attorney Brookings
Lawrence, Jessie, '00.....Teacher Seguin, Wash.
Larson, Lars K., '89.....Cashier Dell Rapids
Lee, Berton E., '02.....Druggist Arlington
Lewis, Perry, '91.....Tinner Mankato, Minn.
Luke, Fred K., '94.....Florist Shaw Bot. G., St. Louis. Mo.
Lusk, Williard C., '96....Editor Yankton

Mason, Nellie, '99..... Albia, Ia.
Madden, Margaret, '92....Teacher Brookings
Mathews, Eva
(Plocker), '92..... Brookings
Mathews, Hubert B., '92..Prof. of Physics S. D. A. C.
Mathews, Alice M., '00....Teacher Winthrop
Mathews, Roscoe A., '00..Mineralogist Great Falls, Mont.
Merrick, Mable
(Mayland), '95 Kansas City, Mo.
McAndrew, James E., '92..Farmer Iroquois
McElmurry, Loretta, '01..Teacher Brookings
McKenney, Dusten W.. 89. Director Man. Tr'n. Homestead, Pa.
*McLouth, Ida B., '92.....
McLouth, Benjamin F.,'93.Insurance Hartford, Conn.
McLouth, Lewis C., '89...Sec. Auto. Co..... Cleveland, O.
Millett, Mary
(Frick), '91..... Rochester, Minn
Miller, Shirley B., '03....Student Minneapolis, Minn.
Moore, Anna
(Parker), '95 Brookings

*Deceased.

Mork, Albert A., '89.....Bank Clerk, ... Brookings
Mork, Theodore, '01..... Des Lacc, N. Dak.
Morrison, Freda C., '00..Teacher Smith

Nachtigal, Isaac, '99.....Teacher Marion
Norton, Frank A., '03....Asst. in Chem.....Brookings

Olson, Eva, '97.....Teacher Madison, Minn.
Olson, Gustava, '00.....Teacher New York, N. Y.
Otterness, Jens M., '03....Clerk Brookings
Orcutt, Carrie
(Ross), '89..... Northfield, Minn.

Paddock, Jay M., '98.....Farmer Aurora
Parsons, Thomas S., '97..Science Teacher Watertown
Pierce, E. Esther, '03.....Teacher Estelline
Phillips, Florence, '01....Teacher Huron
Phillips, C. Louise, '01....Student Brookings
Pyne, Estel W., '90.....Music Dealer Santa Anna, Cal.

Ramsey, Henry J., '02....Ast. in Hort. U.of W.,Madison, Wis.
Riemann, Edith F., '98....Science Teacher ..Stanford, N. Y.
Robertson, Ada N., '93....Clerk Helena, Mont.
Robertson, Clarence H.,'93.Sci. Teach. & Mis..... China
Robertson, Edith
(Salisbury), '95..... China
Roe, Guy W., '90.....Manufacturer Winona, Minn.
Roe, Robert, '98.....Stockman, ... Highmore
Rogers, Edmund, '90..... Milwaukee, Wis.
Roskie, George W., '02....Abstractor Madison
Ross, Abbie E., '89.....Missionary ... San Francisco, Cal.

Sanborn, Ethel I., '03....Student Vermillion
Sarvis, Roscoe J., '03....Teacher Miller
Sasse, Ernest G., '96.....Physician Revillo
Saylor, Christie
(Hargis), '97..... Elmo, Mo.

Saylor, Marcus A., '86....Real Estate Tacoma, Wash.
Schlosser, Thomas F.,'92..Clergyman Ill.
Schoppe, W. J. A., '93....Signal Service Buffalo, N. Y.
Scott, Anna
(Wardall), '89.....Physician Kansas City, Mo.
Seide, Louise, W. M., '03..Teacher Brookings
Sevy, Isaac, B., '95.....Clergyman Canistota
Sevy, Orpha
(West), '97 Canistota
Shuster, John W., '97....Asst. Prof. Elec. Eng., U. of Wis.,
..... Madison, Wis
Sherwin, Howard, '99.....Civi Engineer, Binghamton, N. Y.
Smith, Alta
(Mathews), '96 Bisbee, Ariz.
Solberg, Halvor C., '91...Prof. of Mec. Eng..... S. D. A. C.
Spooner, Jennie
(Chamberlain), '91...Physician Stevens Point, Wis.
Sproul, Alex. H., '94.....Teacher Elgin, Ill.
Sproul, William T., '95....Draughtsman Rockford, Ill.
Stoner, Minnie A., '90....Prof. ofDom.Sci. U.of O.Columbus O.
Tanzy, Hattie
(Dibble), '94.....Matron Yankton College..Yankton
*Tanzy, Marvin F., 94.....
Thornber, John J., '95....Prof. of Bot., U.of Ariz., Tucson,Ariz
Thornber, Wm. T., '98....Farmer Brookings
Thornber, Mary Edith,'02.Asst. in Dom. Sci....S. D. A. C.
Thornber Walter S.,'97..Asst. in Bot. & Hort..S. D. A. C.
Trooien, Ole N., '02.....Asst. in Mechanics....S. D. A. C.
Torrence, Nettie
(Sloan), '92..... Redland, Cal.
Towne, Addie
(Loveland), '98..... Duluth, Minn.
Towne, Judson R., '98....Science Teacher ... Duluth, Minn.

*Deceased.

Valleau, Vinal B., '91.....Pri. Sec. Pres. Am. Ex. Co.....
..... Chicago, Ill.
Walters, Edith, '99.....Merhcant Bruce
Walters, William H., '97..Grain Buyer Bruce
Wardall, Norman M., '90.Real Estate Huron
Waters, George D., '94...Science Teacher Madison
Webster, James L., '03....Minister Wisconsin
Wellman, Lulah E., '88..... Jamestown, N. Y
West, Hugh H., '91.....Physician Elgin, Ill.
West, George H., '99.....Physician Iowa City, Iowa
Westcott, Geo. R., '03.....Teacher York College Neb.
Whitehead, Bower T., '97.Prof of Pharmacy ..S. D. A. C.
Whitten, John C., '92....Prof. of Hort., U. of Mo., Columbia
Wilcox, Alice E., '97.....Teacher Thawville, Ill.
Wilcox, Ernest N., '95....Teacher Thawville, Ill.
Williams, Effie
(Snell), '92..... Madison
Williams, Callie T., '00... Brookings
Williamson, Albert, '96...Supt. Schools and Editor..Oacoma
Winegar, Albert J., '92...Draughtsman Beloit, Wis.
Winegar, Laura, '02 Student Brookings
Wolgemuth, Lee E., '91...Head Draughtsman C., M., St.
P. & O. Ry..... St. Paul, Minn.
Work, Lloyd E., '97.....Editor Chicago, Ill.
Young, Gilbert A., '94....Inst. Purdue U..... LaFayette, Ind
Young, Maggie
(Cranston), '03..... Mellette

PHARMACY GRADUATES. (PH. G.)

Allison, Wm. F., '02..... Student Cornell, N. Y.
Bentley, Wm. S.....Physician Soldiers Home, Hot Spg's
Briggs, Elmer E., '95.....Druggist Muscoda, Wis

Brosseau, Jessie E., '00...Medical Student Chicago, Ill.
Baldwin, Corwin B., '00..Druggist Rapid City
Boyden, Frank E., '02....Medical Student Chicago, Ill.
Beebe, Jay L., '98.....Physician California

Christianson,Bernett C.,'02. Drug Clerk Highmore
Connell, John C., '00.....Druggist Pipestone, Minn.
Cotter, J. C., '96.....Drug Clerk Dell Rapids
Cornell, Edward, '01.....Drug Clerk Huron
Clevenger, J. W., '9o..... Dentist Chamberlain
Carr, George, '99.....Druggist Flandreau
Crowley, D. C., '99.....Druggist Aberdeen

Drew, Arthur W., '03 Drug Clerk Whittier, Cal.

Else, Earl, '00.....Medical Student Chicago, Ill.
Eckert, Henry, '00.....Drug Clerk Scotland

Grove, Eugene, '96.....Medical Student Chicago, Ill.
George, Wm., '00.....Medical Student Chicago, Ill.

Hall, Roy J., '03 Druggist Oldham
Hepner, Frank, '99.....Asst. Chemist S. D. A. C.
Hart, Bertrand, '00.....Medical Student..... Chicago, Ill.
Holsey, Joseph, '98.....Drug Clerk Minneota, Minn.
Hayter, McPherson, '02...Druggist Colman
Heston, Edward C., '03...Druggist Aberdeen
Hollister, Arthur R., '03..Druggist Erwin
Howell, John E., '03.....Drug Clerk Sioux Falls

Johnston, Samuel E., '03..Druggist Vienna
Jones, Robert, '00.....Drug Clerk Madison
Jarrett, Arthur A., '02....Druggist Bristol
Jarvis, Hall S., '02.....Drug Clerk Faulkton

Kendall, Clint D., '99.....Druggist Brookings
Knox, Wm. H., '95.....Asst. U. S. Soil Sur..Fresno, Cal.

Leighty, James A., '02....Drug Clerk Winfred
Lee, Berton, '98.....Drug Clerk Arlington
Lentz, Emil, '95.....Dentist Brookings
Lindsey, Chas., '99.....Stockman Midland

Morton, Frederic M., '02..Drug Clerk Sisseton
*Murphy, Wm., '95.....
Moore, Thomas, '96.....Druggist Garretson
Norton, Frank A., '03....Asst. Chemist S. D. A. C.

Oulton, Frank, '99.....Druggist Faulkton

Pickles, Chester E., '02...Druggist Bradley
Palmer, Horton, '96.....Druggist White

Schnaidt, Henry, '02.....Drug Clerk Groton
Schroeder, Anna C., '02..Drug Clerk Howard
Sherwin, Frank, '96.....Farmer Brookings
Shriver, E. M., '99.....Druggist Elkton
Steiner, Frederick W., '03.Medical Student .. Baltimore, Md.
Thomas, John C., '02.....Drug Clerk Hartford
Taylor, C. DeWitt, '99....Drug Clerk Denver Col.
Tidball, Clyde, '01.....Drug Clerk Brookings
Trumm, Robert E., '03....Drug Clerk Bryant

VanDusen, Fred J., '03....Drug Clerk, ... Lake Preston

West, Hugh H.....Physician Elgin, Ill.
Whitehead, B. T., '95.....Prof. Pharmacy S. D. A. C.
Williams, Percy, '03.....Student S. D. A. C.
Young, Alfred J., '03.....Drug Clerk Mellette

POST GRADUATES.

Ole N. Trooien, '03, B. S.

*Deceased.

SENIOR CLASS.

William W. Binford.
Maude A. Bushnell.
Anna Y. Loucks.
Albert ... Mattice.
Lawrence R. McGarry.
Thomas H. Ruth.
Everett G. Sanderson.
Ralph L. Sherwin.
William H. Smith.
Clarence Thompson.
L. Erving Walter.

ADVANCED CLASS IN PHARMACY.

Earnest Anderson.
Cornelius S. Dillon.
Harry E. Frick.
Alton A. Goodale.
Henry Hooker.
Arthur E. Koch.
Leonard C. Ramsdell.
Godfrey Thompson.
Theodore Weisflock.

LIST OF STUDENTS

A

Aasved, Mina H Bristol
Aga, Gottfried N. Dell Rapids
Ahre, Theodore Toronto
Albion, Henry R. Custer
Aldrich, George Malcolm Brookings
Aldrich, Inez E. Brookings
Allen, Stanley W. Flandreau
Alexander, Frank B. Canton
Allison, Harold Brookings
Alton, Ben H. Brookings
Alton, Lila F. Brookings
Anderson, Albert A. Hitchcock
Anderson, Andrew Prairie Queen
Anderson, Anna M. Denmark
Anderson, Ernest Marvin
Anderson, Howard C. Brookings
Anfinson, Albert Castlewood
Arneson, Marie Brookings
Archambio, Fred Effington
Atkinson, Fred E. White
Atwood, George B. Erwin
Aubuchon, H. C. Little Eagle
Austin, Floyd C. Brookings

B

Beatty, Arthur C. Hitchcock

Beatty, George F. Blooming Prairie, Minn.
Beatty, Lois M. Hitchcock
Benson, Albert L. Parker
Benson, Julius B. Parker
Benson, Sverdrup Jasper, Minn.
Berg, Arthur Stockholm
Berg, Bernard Stockholm
Berry, John M. Jolley
Berry, Lessie Willow Lakes
Berry, Mabel C. Jolley
Bertus, Albert W. Avon
Bickert, W. J. Bowdle
Binford, William W. Brookings
Bingham, Perry Redfield
Binnewies, Mabel E. McCurdy
Blackstone, Frank Arlington
Blackstone, Harry Arlington
Blackstone, Josie Brookings
Blackstone, Maude Brookings
Blakely, John R. Brookings
Blanch, Etta W. Mantorville, Minn.
Blank, Frank D. Ipswich
Blanchard, Verne C. Brookings
Blodgett, Frances Arlington
Blummer, Mark Beresford
Bones, Walter I. Parker
Bonesteel, Bee M. Brookings
Booth, J. Carlos Arlington
Bowles, Frank E. Groton
Boyd, Walter C. Bowdle
Boyd, Thomas Bowdle
Boyd, Merritt Sioux Falls
Boyden, Guy L. Brookings
Briggs, S. F. Watertown

Brinker, Dorothea Hartley
Broholm, Carl A. Clark
Brown, Charles H. Volga
Brown, George L. Brookings
Brownell, D. D. Mellette
Brownell, Ellen Mellette
Buck, Oscar F. Frankfort
Burghardt, Roy D. Valley Springs
Burnstad, Carl Dexter
Bush, Hugh M. Armour
Bushnell, Maude Brookings
Buum, Christ Alcester
Byer, Joe E. Altamont

C

Carlson, Eric H. Beresford
Carpenter, Abbie J. Brookings
Chaffee, Frank Eugene White Lake
Chalmers, Elizabeth Anderson Brookings
Chalmers, Elizabeth Brookings
Chalmers, James A. Brookings
Chalmers, Wallace Brookings
Chappell, Bessie Brookings
Chappell, Elsie Brookings
Chilcott, Ellery F. Brookings
Christianson, Malla G. Volga
Clark, Blanche C Brookings
Clark, Roy Howard
Cockburn, Frances W. Hampton Falls, N. H.
Colegrove, Letta A. Brookings
Coller, Fred A. Brookings
Conner, George J. Orient
Cooley, William N. Garretson
Corbin, W. Eugene Wessington Springs

Costlow, Arthur G. Madison
Coughlin, Carthage J. Carthage
Craig, Erle F. Greenwood
Culhane, William Elkton
Currie, Hugh D. Ramona

D

Danforth, Forrest Raymond
Davis, Clifford W. White
Davis, Harold Brookings
Davis, Hugh M. Brookings
Davis, Richard B. Flandreau
Davis, Victor W. Bowdle
Davis, Fannie E. Brookings
Davison, Frances Brookings
Dewald, Reinhold Freeman
Digre, Peter Hendricks, Minn.
Dill, Floyd H. Bancroft
Dillman, Arthur Revillo
Dillon, Cornelius S. Sioux Falls
Dobbs, Charles Egan
Drageset, Jacob Madison
Duggan, Sherman Reels P. O., Iowa
Dutcher, Adams Brookings
Dyce, Belle, ... Colman
Dykins, Edna Ramona
Dykins, Frank A. Ramona

E

Egge, Oscar Garretson
Elliott, Bruce Brookings
Elliott, Ross Brookings
Elliott, Roy K. Brookings
Erickson, Edward Hendricks, Minn.

Erstad, Alfred Brookings
Evans, Edna V. Brookings
Evenson, Elmer Toronto
Evenson, Olaf Volga
Eyerly, E. K. Brookings

F

Fassett, Della M. Brookings
Fee, Peter Woonsocket
Feyder, C. H. Hartford
Fick, Edwin F. Brookings
Fick, William Brookings
Fishback, Blanche Brookings
Fishback, Van Brookings
Fjerestad, Alman Estelline
Flanders, Jessie Brookings
Forbragd, Sigurd Dell Rapids
Forsburg, Ole Baltic
Forrest, V. E. Tyndall
Freeman, George G. Canova
Frick, Harry Glen
Fulkerson, Vincent Brookings
Furnstahl, John P. Howard

G

Gagel, Babetta Brookings
Gagel, Gerald Brookings
Gilbert, William J. Artesian
Goodale, Alton R. Brookings
Grace, Oliver J. Woonsocket
Graff, George Wentworth
Graham, A. Roy Beresford
Graham, Willis C. Beresford
Grange, Ross Flandreau

Gray, Reuben L. Alpena
Greenly, Jay H. Brookings
Griffith, Edwin McCook
Grinde, Martin Dell Rapids
Grove, Mary I. Brookings
Grudem, John Brookings
Gudmunson, Severin Canton
Gunnison, Viola M. Bancroft
Gurslee, Christ Hendricks, Minn.

H

Hage, Christian F. Toronto
Haggardt, Anna Aurora
Haggardt, George Aurora
Hanson, Dorothy Brookings
Hanson, Samuel Brookings
Hanten, Mike White Lake
Hartwick, Albert Brookings
Hartwick, Galien C. Brookings
Harza, Mabel C. Brookings
Haug, Henry B. Willow Lake
Haven, Ferdinand G. Mellette
Hazen, Richard Salem
Hegdahl, Hans A. Prairie Queen
Hepner, Frank E. Brookings
Hillan, Ludwig Wentworth
Hillistad, Alfred Volga
Hofstetter, George Bard
Holland, Christopher Elkton
Holliday, Guy M. Brookings
Holm, Andrew B. Brookings
Hooker, Henry F. White
Hoover, Homer Brookings
Hopkins, R. May Brookings

Hougen, Clarence Wilmot
Howg, Edwin M. Effington
Hoy, Orla J. LaDelle
Huss, Iva, ... Mongo, Ind.
Hyde, Winifred R. Brookings

I

Ingvalson, Clara Flandreau

J

Jensen, Anna Hand
Jensen, Ephra Hand
Jensen, Godfrey Hand
Jensen, Lewis N. Conde
Jesme, Oliver Brookings
Johnson, Ali Orland
Johnson, Albin G. Stockholm
Johnson, Alvin Brookings
Johnson, Frans A. Orland
Johnson, Carl L. Norway Lake, Minn.
Johnson, Carl G. Hartman
Johnson, Chas. Pioneer
Johnson, Christ Dolph
Johnson, Edwin A. Perkins
Johnson, Gilbert Erwin
Johnson, Henry J. George, Iowa
Johnson, John J. Brookings
Johnson, John O. Mayfield
Johnson, Joseph O. Hendricks, Minn
Johnson, Mary A. Brookings
Johnson, Selma Brookings
Johnson, Tedem Elk Point
Johnson, Tena Brookings
Johnson, Thora Brookings

Johnston, Chas. W. Willow Lake
Jorgensen, Elias D. Irene
Jorgensen, Nielsene Irene
Josephson, Guy E. Kimball
Junker, Louise Vermillion

K

Karlstad, Julia B. Volga
Kartrude, Eilert Hartwick, Minn.
Kelan, Harold Brookings
Kelan, Julia Brookings
Kellough, Lewis Brookings
Kelly, Thomas B. Brookings
Kendall, Nellie Brookings
Kennard, Frank L. Brookings
Kennel, Peter Butler
Kessel, Florence Aurora, Ill.
Kluckman, William Clear Lake
Knox, Arthur Alpena
Knutson, Anton Jasper, Minn.
Knutson, Mabel Brookings
Koch, Arthur Eureka
Koch, Edwin E. Eureka
Koerner, Jacob Freeman
Kremer, Alvin Brookings
Kremer, Henrietta Brookings
Kress, Alfred H. New York City, N. Y.
Kukuk, Edward O. Brookings

L

Labbitt, Neil Vilas
Ladd, Horace Brookings
Ladd, William Brookings
LaMont, Guy A. Willow Lake

Lampson, Bert C. Colman
Landsverk, Peter Arlington
Larson, Adolph Volga
Larson, Henry Colman
Larson, Lars P. Vilas
Larson, Martin Vilas
Ledyard, Gurdon H. Sioux Falls
Leekley, Elsie Brookings
Lemler, Theodore C. Hoven
Lewis, Noel Conde
Lewison, Alvin Elk Point
Liskie, Hulda Brookings
Lindahl, Edward Strandburg
Lindner, Anna M. Kranzburg
Lindskog, Clement Bruce
Lindskog, Ella L. Bruce
Lindskog, Telia A. Bruce
Lloyd, Robert Brookings
Linn, Ellen LaBolt
Long, Agnes Webster
Long, James Elmer Volin
Loucks, Anna Y. Altruria
Loucks, Perry F. Altruria
Lower, Frank Howard
Lyman, Edward Huron

M

McCordic, Clare Groton
McCormick, W. John Mt. Hope, Wis.
McCurdy, Walter Letcher
McElmurry, Rilla Brookings
McGarry, Lawrence Brookings
McKeown, Earl C. Elkton
McKeown, Ralph Elkton

McMillan, Arthur E. Conde
McTighe, Cumian J. Bancroft
Manson, C. F. Canton
Margeson, Chester Bruce
Maroushek, Frank Cresent Grove
Matheny, Chester Turton
Mathews, Harry E. Brookings
Mattice, Albert F. Sedro Wooley, Wash.
Maxwell, John A. Arlington
Meigs, Austin Highmore
Meyer, Mary Brookings
Miller, Ralph L. Brookings
Moe, Amy Astoria
Moffatt, Margaret E. Brookings
Molskness, Oliver Colman
Moran, Frank Madison
Morrison, Guy E. Top Bar
Morrison, Joseph D. Top Bar
Morton, Grant Toronto
Murphy, John L. Brookings
Murphy, Matt W. Brookings

N

Neeley, Forest B. Pierre
Nelson, Charlie Brookings
Nelson, Arthur Hurley
Nelson, Edd J. Wessington
Nelson, Ellen T. Strandburg
Nelson, John Brookings
Nelson, Otto Hurley
Nessler, Eva M. Arlington
Nilsson, Edward Gary
Newton, Samuel Britton
Nold, George J. Springs

Norton, Frank Centerville
Nystrum, Gustaf A. Athelwold

O

Odland, Lewis Hurley
Olberg, Henry O. Brookings
Oldre, Martin Kenneth, Minn.
Oliver, Ben D. Madison
Olson, Lillie R. Bruce
Olson, Oscar Brookings
Otterness, Lars A. Brookings
Overby, Arthur Mellette

P

Parizek, Anna, ... Wyndmere, N. D.
Parizek, Bertha Wyndmere, N. D.
Parizek, Marie Wyndmere, N. D.
Parry, Griffith, ... Plankinton
Peck, Clifford Sioux Falls
Pederson, Hannah Erwin
Peirce, Robert E. Brookings
Peirce, Ruth Brookings
Perrault, Urbain S. Elk Point
Perry, Will J. Brookings
Peters, J. Hayden Goodview, Virginia
Peterson, Jessie M. Brookings
Peterson, Nora Arlington
Peterson, Ora D. Brookings
Phillips, C. Louise Brookings
Pike, Ernest E. Aurora
Plocker, Florence Brookings
Pottinger, George Valley Springs
Price, Maude Langford
Prowse, Genevieve Brookings

R

Raml, John B. Goodwin
Rasmusson, Robert K. Astoria
Regner, Joseph F. Howard
Rehfeld, Herbert Elkton
Rhenke, Willie Crandon
Reich, Carl J. Tunnel City, Wis.
Reich, Rose M. Tunnel City, Wis.
Reid, George B. Raymond
Retsel, Albert Center Point
Reynolds, Jesse Madison
Richardson, Arthur K. Vermillion
Richardson, Fawnie S. White
Rider, Mark L. Webster
Riedlinger, Orson C. Hazel
Ritchie, Paul Raymond
Roberts, Clyde Royal, Iowa
Roberts, John J. Columbia
Rogness, Thomas J. Astoria
Ronning, Oscar E. Brookings
Root, Clara Britton
Rowan, Ed Carthage
Rude, George O. Brookings
Ruan, Thomas De Smet

S

Salisbury, George E. Redfield
Salmon, Cecil Spencer
Sanderson, Eugene Brookings
Sanderson, Everett Brookings
Sanderson, Nels F. Flandreau
Sarvis, Hubert C. Highmore
Sarvis, Johnson T. Brookings
Sawyer, Kenneth Dell Rapids

Sayre, Harry Brookings
Schaphorst, William Brookings
Schoenwether, Albert Lake Preston
Scriver, Althea Dell Rapids
Scriver, James Dell Rapids
Seeger, Adolph Marietta, Minn.
Seeley, Mabel Bonilla
Seeman, Arthur A. Highmore
Seide, Priscilla Milbank
Semmen, Henry C. Dell Rapids
Seney, Arthur Howard
Sherwin, Ralph L. Brookings
Sigurdson, Henrietta Minneota, Minn.
Sieh, William Groton
Sisson, William Tyler, Minn.
Skiff, Ethel M. Brookings
Skinner, Frank A. Revillo
Slocum, Ina S. Herreid
Smith, Arthur C. Henry
Smith, Carl P. Irene
Smith, Carrie E. Arlington
Smith, C. Gardner Hurley
Smith, Lester E. Merton
Smith, Manzo Alpena
Smith, Peter Wakonda
Smith, Stanley Farmer
Smith, William Wilmot
Snoxell, William J. Mellette
Solem, Ole O. Volin
Sorenson, John Hurley
Splinter, Frank G. Amboy, Minn.
Stark, Edward J. Salem
Staum, Mike Elk Point
Staven, Emil Brookings

Stebbins, Emmons B. Bard
Steen, Emma Brookings
Stensland, John E. Toronto
Stene, Ole O. Alcester
Sternhagen, Joseph P. Scotland
Stevenson, Clara B. Brookings
Stites, Sam L. Sioux Falls
Sullivan, Dennis W. Milbank
Svaren, Christina Volga
Swanson, Addie M. Brookings
Swenson, Arthur Viborg
Synogroung, Ole Groton

T

Taecker, Emma Watertown
Teuber, Anton Huron
Thievas, Joseph Goodwin
Thogerson, Arthur A. Yankton
Thomas, John C. Freeman
Thompson, Bertha Colman
Thompson, Clarence Dell Rapids
Thompson, Florence Brookings
Thompson, Georgina Dell Rapids
Thompson, G. Tillman Dell Rapids
Thompson, Gottfried Dell Rapids
Thomson, Henry A. L. Platte
Thompson, Henry E. Colman
Thompson, John T. Garretson
Thompson, May P. Brookings
Thompson, Ole Baltic
Thompson, Thomas Storka
Thompson, Tollef Baltic
Thompson, Tora Hetland
Thornber, Edith Brookings

Thornber, Jessie Brookings
Thornber, Will T. Brookings
Thorson, Bertha Flandreau
Thorson, Mary Flandreau
Throop, Lottie May Volga
Throop, Ross Volga
Tommeraasen, Paul Madison
Tompkins, Ray S. Spencer
Trooien, Ole N. Prairie Farm
Trumm, Fred A. Hayti
Trygstad, Belle M. Brookings
Tschudy, Otto Beresford
Tucker, Bessie Brookings
Tuff, Marius Hills, Minn.
Tuttle, Volney Madison
Twedt, Henry Volga

U

Uhde, Richard L. White Lake
Unruh, David C. Hurley
Urevig, Henry T. Dolph

V

Vandenberg, Earl F. Conde
Vernlund, Carl Astoria
Volin, H. Porter Volin

W

Walsh, John Mission Hill
Walsn, Thomas Mission Hill
Walter, L. Erving Alexandria, Minn.
Walters, Daisy M. Bruce
Walters, Verner Bruce
Waltz, P. Ward Arlington

Wandel, Sam A. McCurdy
Wandell, Valdina Colman
Weaver, Ethel B. Brookings
Weisflock, Theodore Kimball
Welch, Hazel Arlington
Welker, Jay Wessington
Welker, V. E. Redfield
Wennack, Oscar Groton
West, Florence E. Brookings
West, Frances E. Brookings
West, Harold R. Brookings
Westcott, George R. Brookings
Westcott, Ruth Brookings
Westrum, Oscar Volga
Whitehead, B. T. Brookings
Whitmus, John A. Brookings
Wiese, Gust Wentworth
Wilbur, Carl Columbia
Williams, Harry A. Brookings
Williams, Losey J. Brookings
Williams, Percy Brookings
Wilson, Frank Brookings
Wilson, Roy Brookings
Winegar, Laura E. Brookings
Wing, Lulu B. Arlington
Witzel, Edith Brookings
Wolfe, Fern M. Hetland
Work, Mary Louise Brookings

Y

Yanke, Ida Brookings
Yeandle, Arthur C. Highmore
Youngberg, Guy E. Volga
Youngberg, Mamie Volga

York, Bert Winthrop

Z

Zirbes, Helen Brookings

STUDENTS IN SIX WEEKS AGRICULTURE.

Benson, Albert Parker
Benson, Julius Parker
Benson, Sverdrup Jasper, Minn.
Dunklee, E. H. De Smet
Dwight, Clarence, ... De Smet
Fulkerson, S. M. Brookings
Gleason, Martin Mitchell
Hinckley, Murice Gettysburg
Jensen, Jimmie Dell Rapids
Johnson, Austin M. Brookings
Josephson, G. E. Kimball
Julson, James Garretson
Klugness, Elmer Garretson
Nevramoen, Andrew Langford
Newby, John J. Goodwin
Pultz, Carl Lake Preston
Ross, A. C. Woonsocket
Thompson, Henry A. L. Platte
Ward, Rollin O. Artesian
Watznauer, Eddie J. Artesian

Total regular students	504
Total six weeks students	20
	524
Counted twice	5
Grand total	519

STUDENT ORGANIZATIONS

INDUSTRIAL COLLEGIAN.

Lewis N. Jensen Editor in Chief
Carl Johnson Business Manager

ATHLETIC ASSOCIATION..

Thos. H. Ruth President
L. Erving Walter Secretary
Clarence Thompson Treasurer
Thos. H. Ruth, Pres. State Inter-Collegiate Athletic Association

ORATORICAL ASSOCIATION..

Matt Murphy President
Howard Anderson Secretary
Ralph Miller....Sec. and Treas. State Oratorial Association
Ralph Miller.....Treasurer Western League of Oratory

BAND.

J. P. Mann Leader

YOUNG MEN'S CHRISTIAN ASSOCIATION.

William Smith President
Arthur Beatty Secretary

YOUNG WOMEN'S CHRISTIAN ASSOCIATION.

Ellen Brownell President
Belle Dyce Secretary

ATHENIAN LITERARY SOCIETY.

R. G. Burghardt President
Mabel Binneweis Secretary

MILTONIAN LITERARY SOCIETY.

Nels Sanderson President
Ethel Weaver Secretary

FRANKLIN LITERARY SOCIETY.

Losey Williams President
Mabel Seeley Secretary

ART CLUB.

F. A. Norton President
Ruth Peirce Secretary

PHARMACY CLUB.

Earnest Anderson President
Con Dillon Secretary

S. D. A. C. CHORAL UNION.

Malcolm Aldrich President
Florence West Secretary
J. P. Mann Leader

MILITARY ROSTER

COMMANDANT.

J. C. McARTHUR, Captain Twenty-Eighth Infantry, U. S. A.

BATTALION FIELD AND STAFF.

Major Cadet Ralph L. Miller
First Lieutenant and Adjutant Cadet Con Dillon
Second Lieutenant and Quartermaster..Cadet Arthur Beatty

NON-COMMISSIONED STAFF.

Sergeant Major Cadet Edwin Griffith
Color Sergeant Cadet Guy E. Youngberg
Principal Musician Cadet Gottfried Thompson

COMPANY "A".

Captain Cadet Harold Allison
First Lieutenant Cadet Alman Fjerestad
Second Lieutenant Cadet Guy L. Boyden
First Sergeant Cadet Ellery Chilcott
Quartermaster Sergeant Cadet Horace Ladd
Sergeant Cadet Ross Elliott
Sergeant Cadet Floyd Austin
Sergeant Cadet Cecil Salmon
Sergeant Cadet Eugene Corbin

Corporal Cadet Carl Reich
Corporal Cadet Arthur Koch
Corporal Cadet Ernest A. Anderson
Corporal Cadet Earl Craig
Corporal Cadet Steven F. Briggs

COMPANY "B".

Captain Cadet Sherman M. Duggan
First Lieutenant Cadet Fred A. Coller
Second Lieutenant Cadet Wm. N. Cooley
First Sergeant Cadet R. A. Dutcher
Quartermaster Sergeant Cadet Homer Hoover
Sergeant Cadet A. E. Schoenwether
Sergeant Cadet H. E. Frick
Sergeant Cadet Frank Kennard
Sergeant Cadet H. F. Hooker
Corporal Cadet Arthur Knox
Corporal Cadet Grant Morton
Corporal Cadet Frank D. Bowles
Corporal Cadet C. W. Johnston
Corporal Cadet Frank Dykins

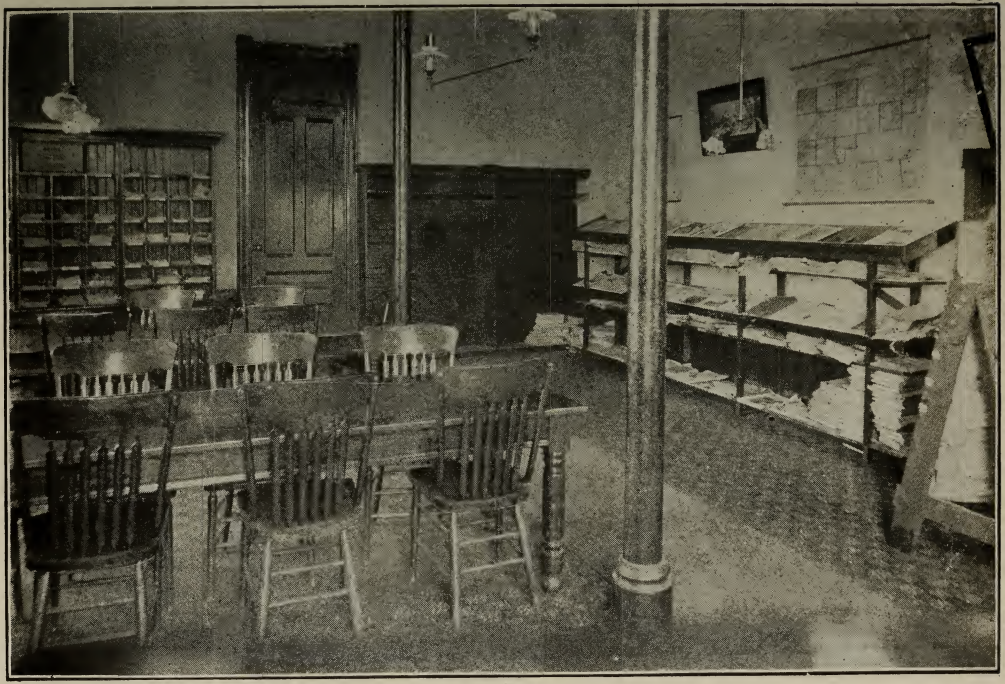
PART TWO

ILLUSTRATIONS



The Central Building





Reading Room



Experiment Station Building



Experiment Station Chemical Laboratory

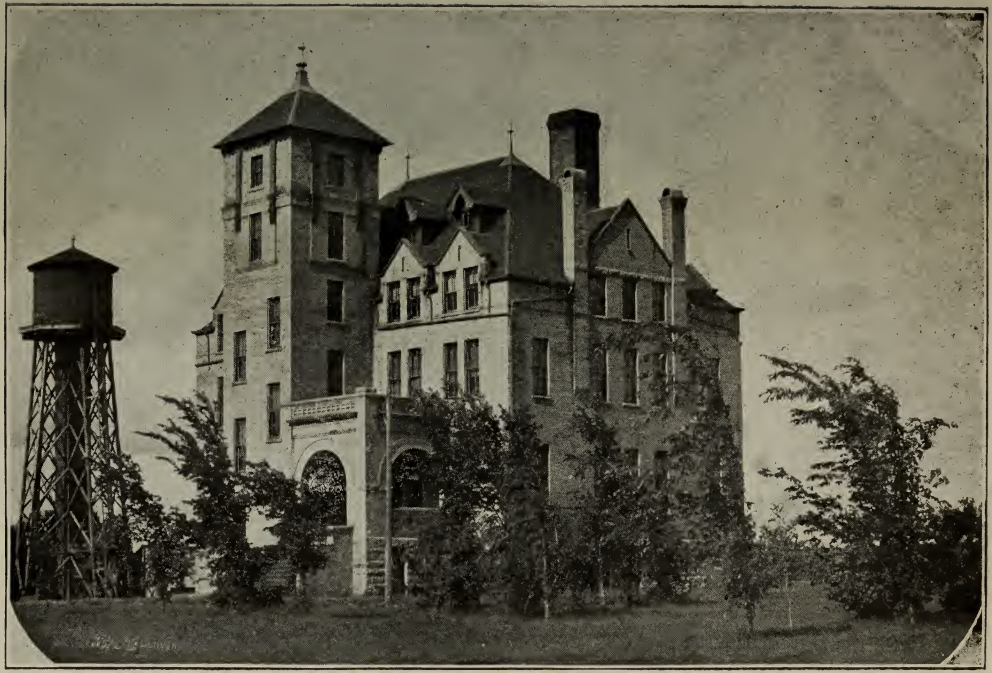


Experiment Station Soil Physics Laboratory



The Museum





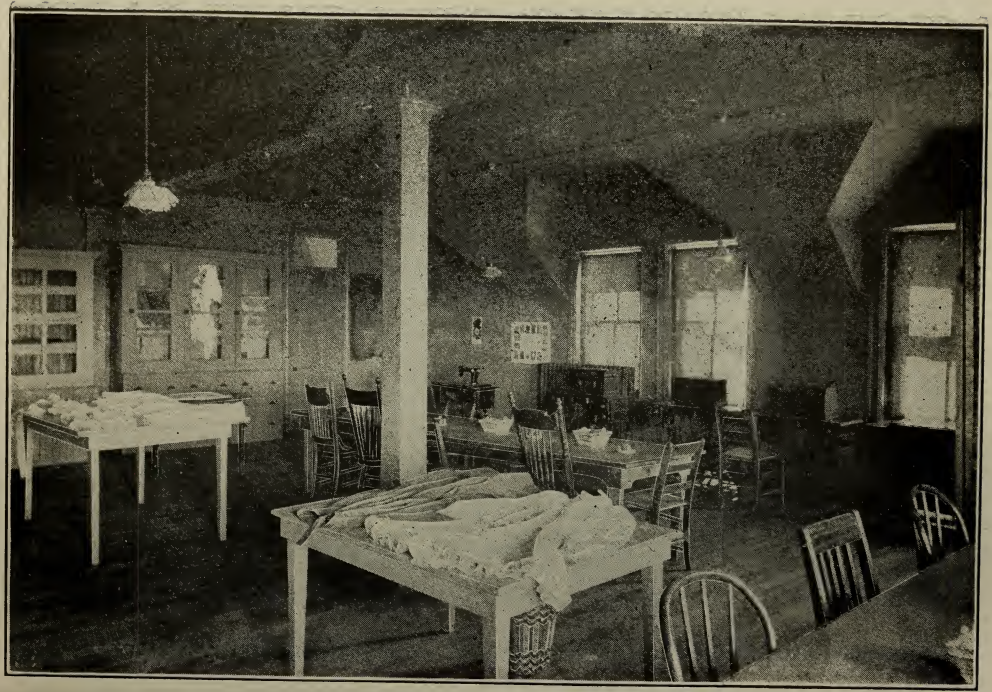
The North Building



Domestic Science Dining Room



Domestic Science Kitchen



Domestic Science Service P



In the Art Room



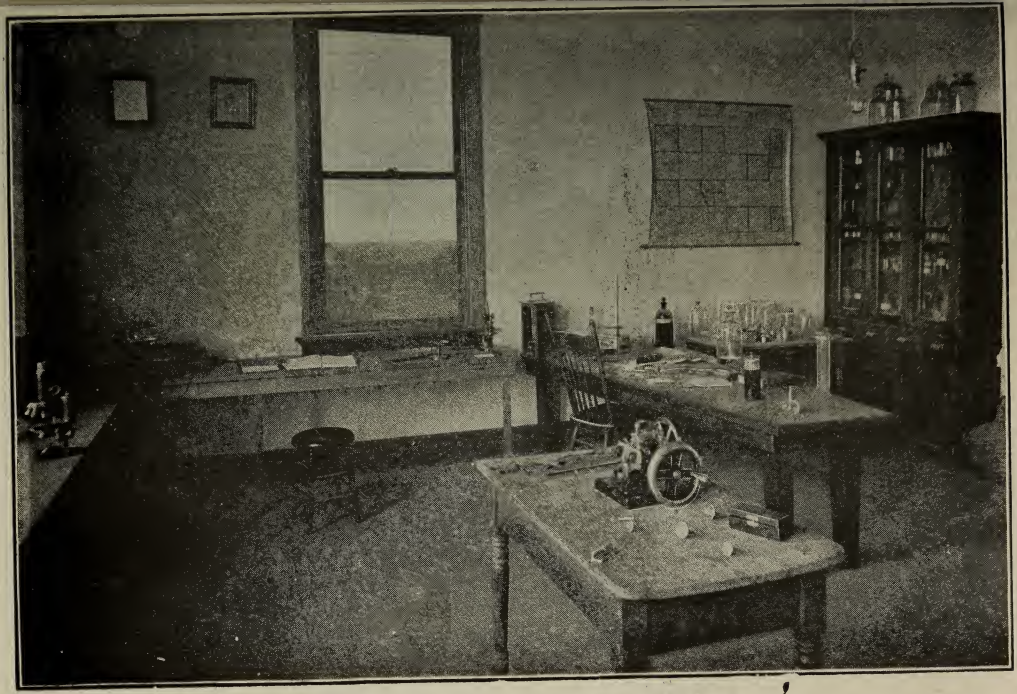
The Plant Breeding Building



An Interior View of the Green House



The Botanical Laboratory.



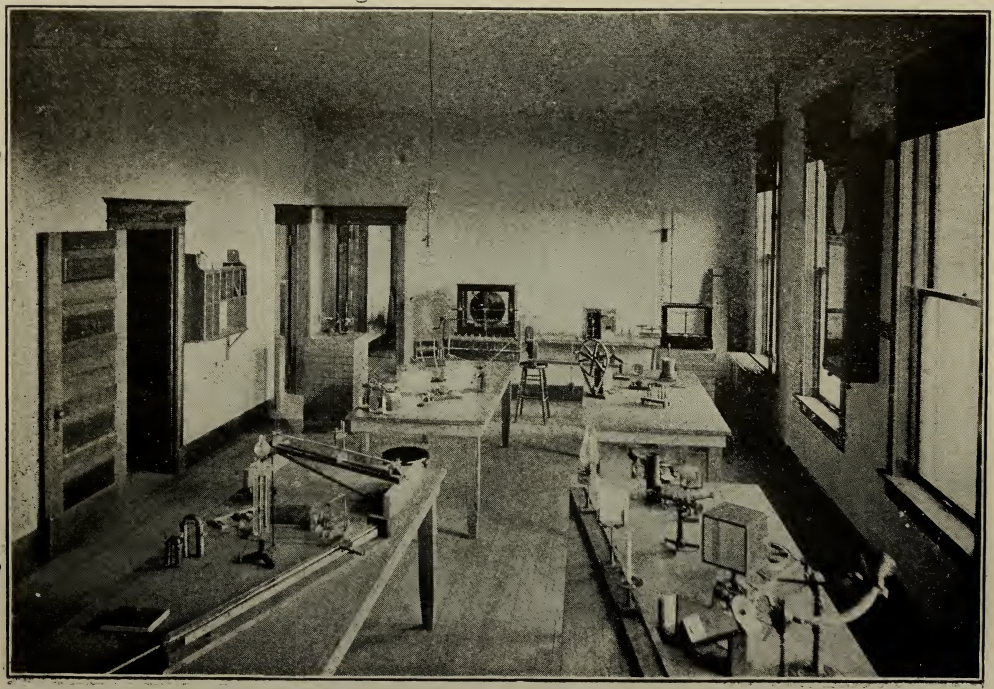
Advanced Botanical Laboratory



Engineering and Physics Building



The General Physics Laboratory

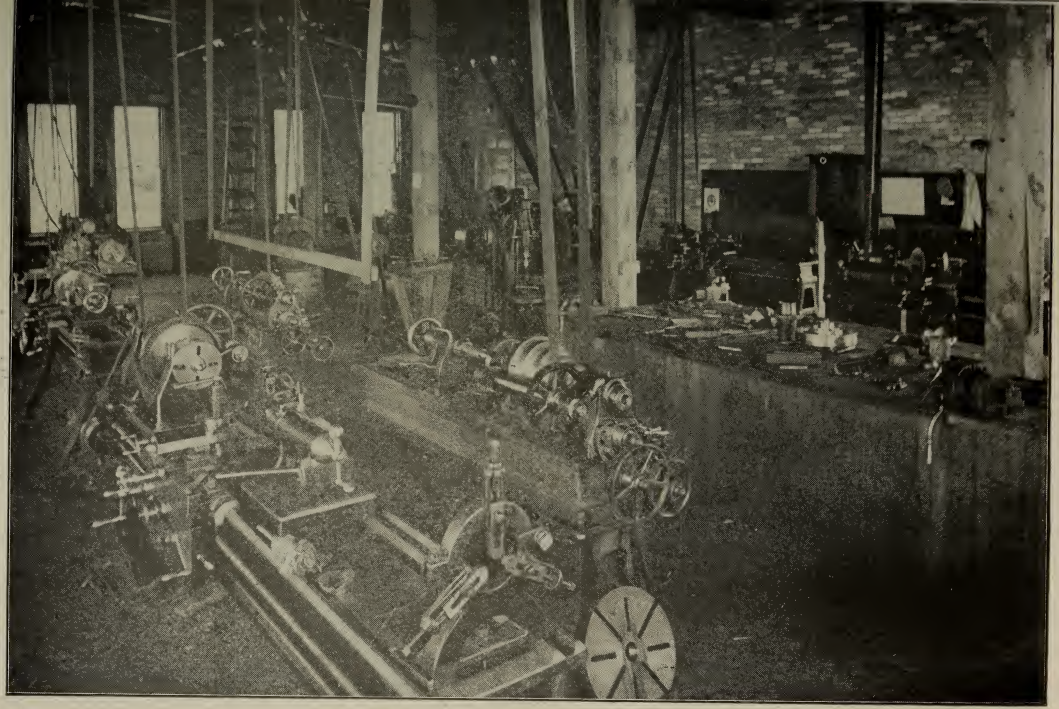


Advanced Physics Laboratory

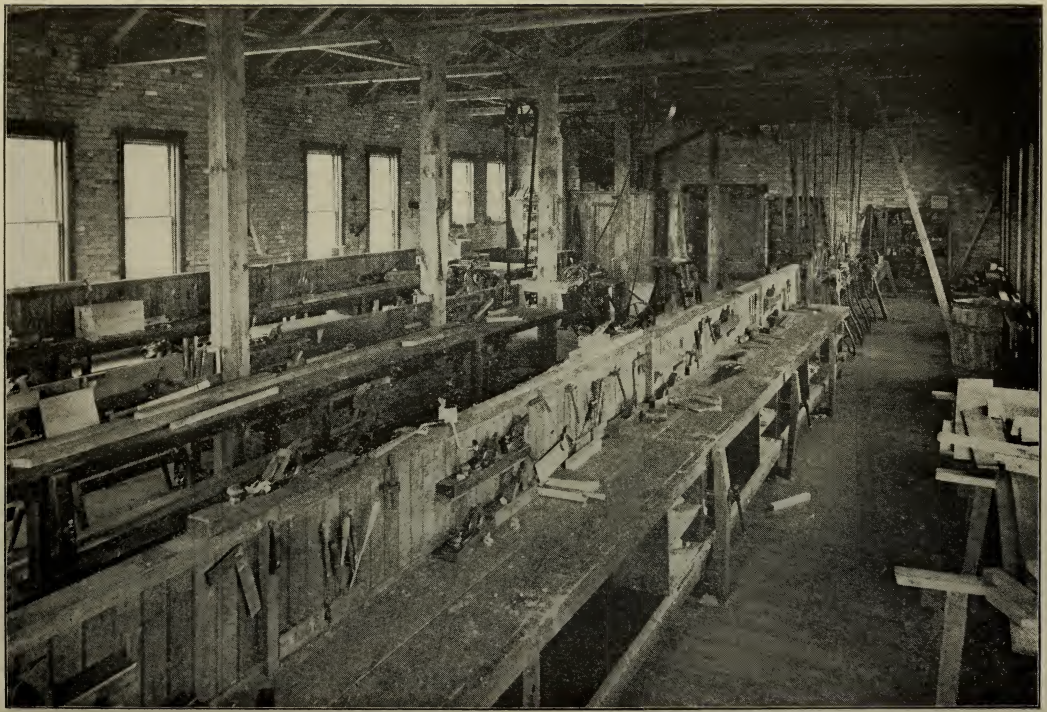


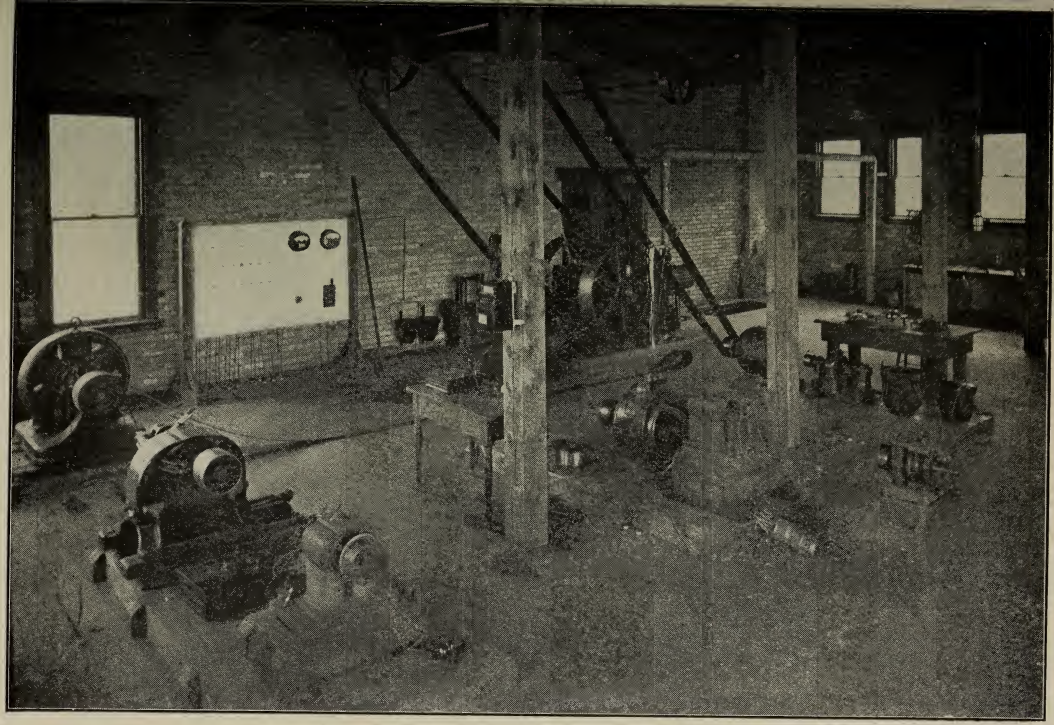
The Blacksmith Shop





Iron Shop

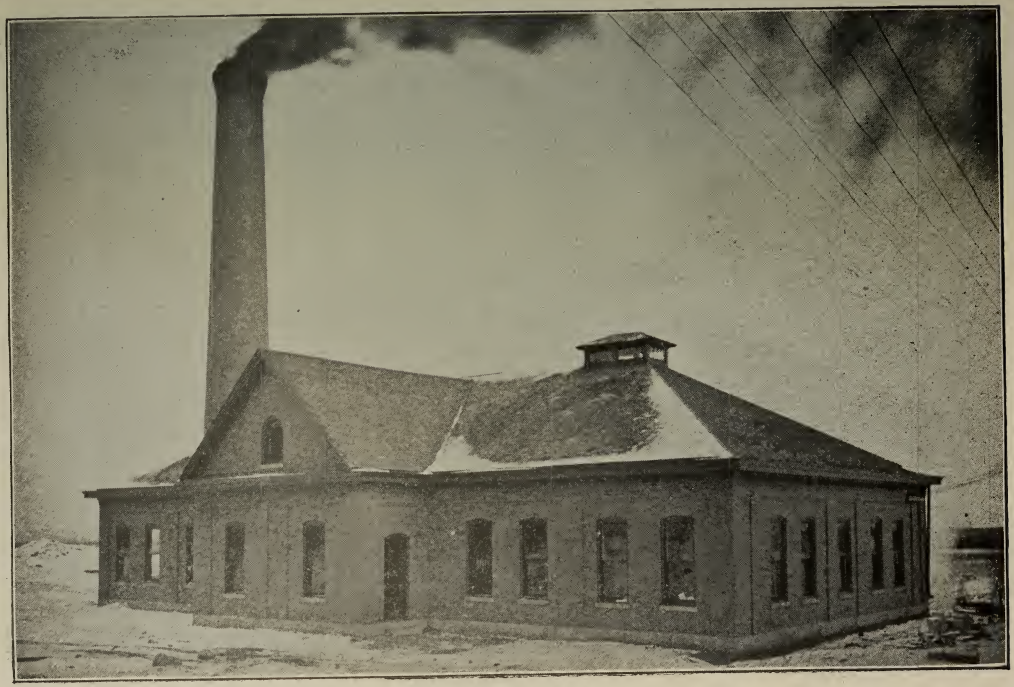




Dynamo Room



Engine Practice



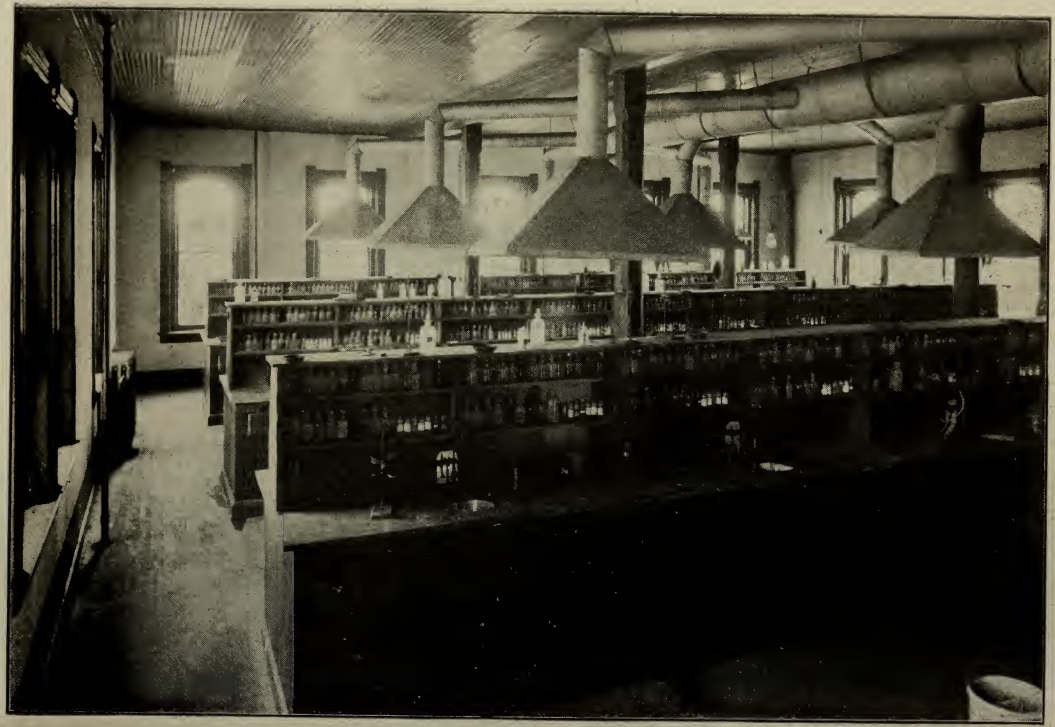
The Heating Plant



Astronomical Observatory



The Chemistry and Pharmacy Building

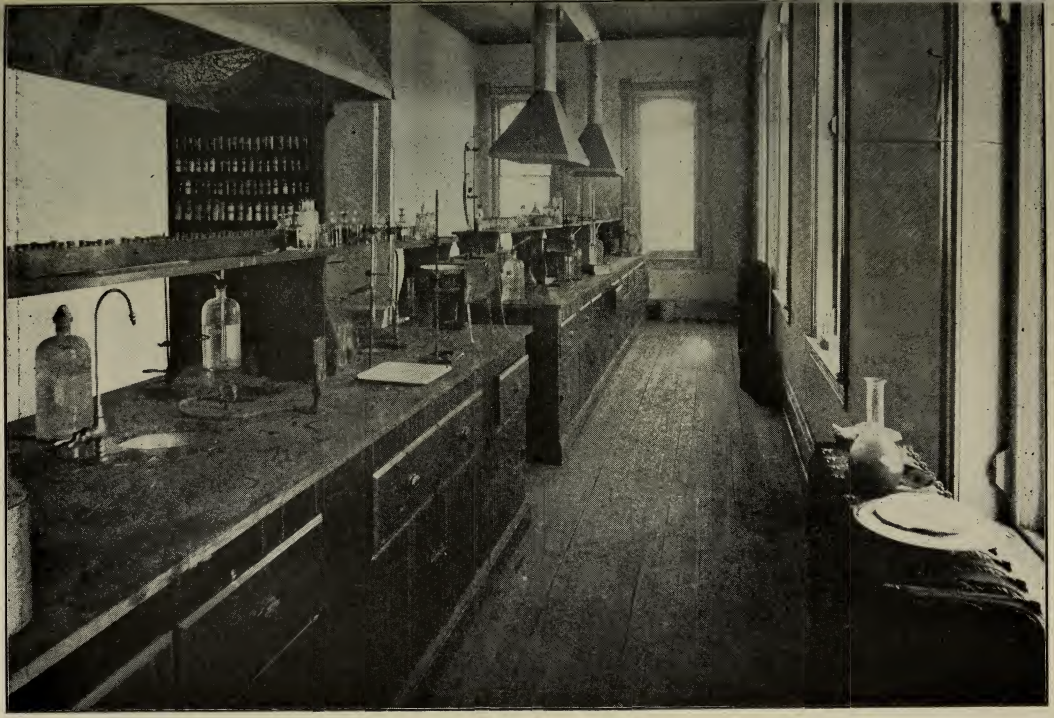




Quantitative Laboratory



Balance Room



Pharmacy Laboratory.





Soil Physics Apparatus



Class in Corn Judging.



Class in Stock Judging.





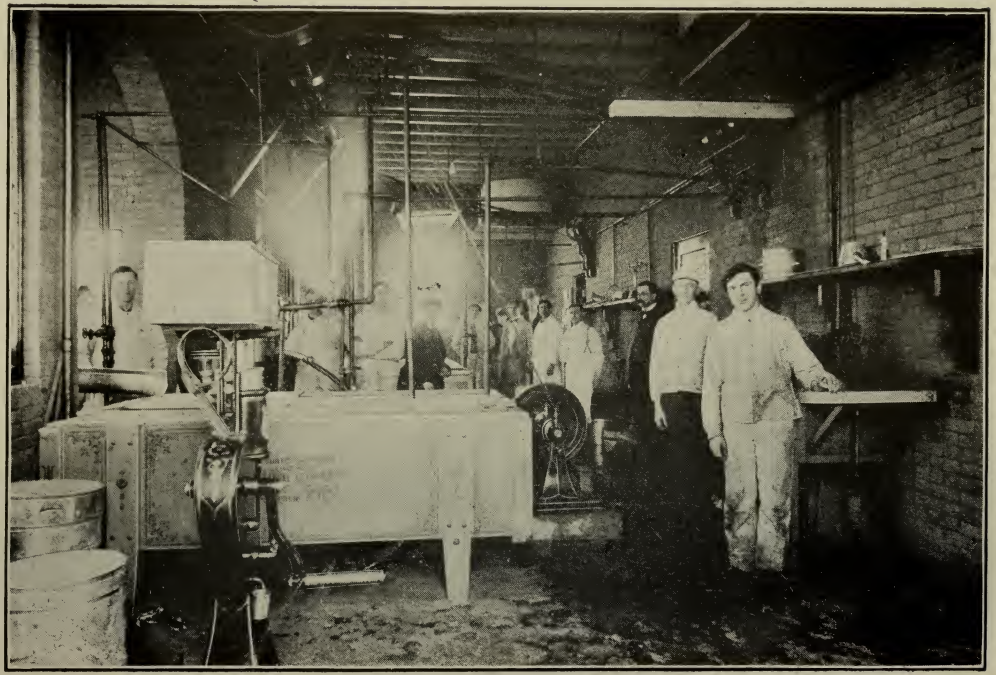
The Sheep Barn.



The Creamery.



Testing Milk

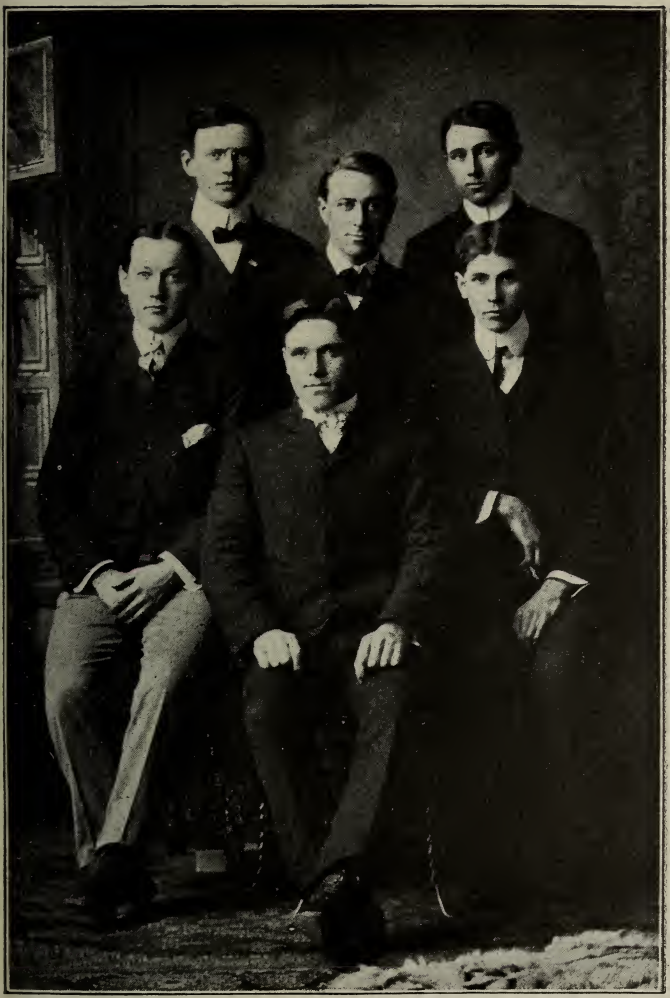


Glass in Dairying



President's Residence.





Officers of the Y. M. C. A.

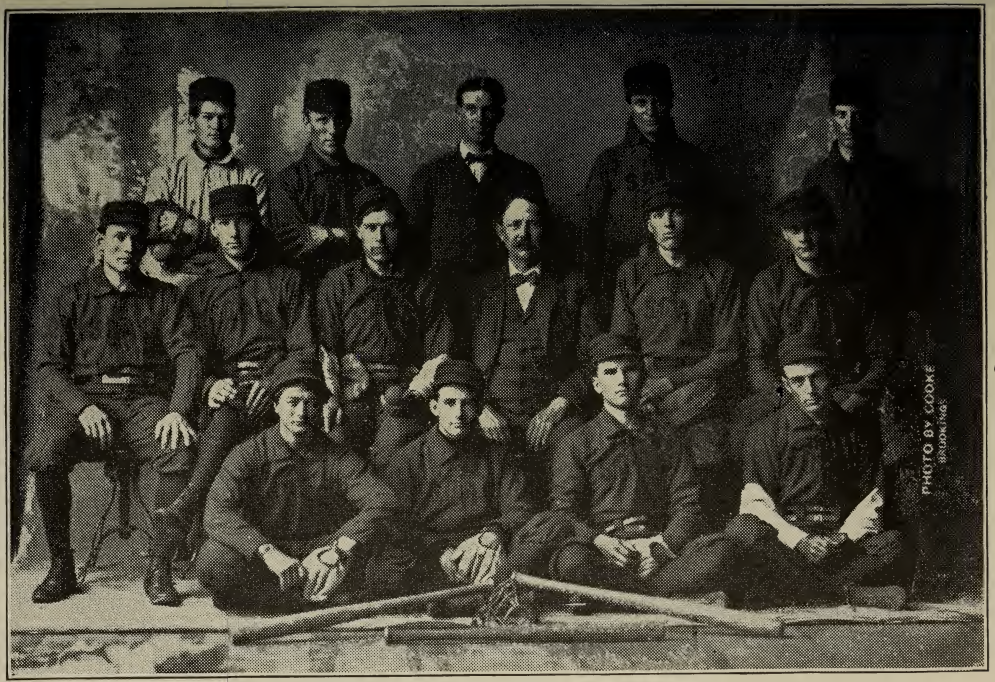


Drill Hall and Gymnasium



Commandant and Officers Cadet Battallion.


Capt



Base Ball Team 1903.

PART THREE

GENERAL INFORMATION

GENERAL INFORMATION

A—HISTORICAL.

1. Establishment.—An act of Congress approved July 2, 1863, gave to each state 30,000 acres of public lands for each representative in Congress towards "the endowment, support and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts." In compliance with this act the territorial legislature of 1881 passed an act establishing an agricultural college at Brookings in the territory of Dakota.

The legislature of 1883 provided for the erection of the first building. This building, now known as the Central building, was built in 1884.

Upon the Division of the territory of Dakota into the states of North and South Dakota when admitted into the Union in 1889, the Agricultural and Mechanical College of Dakota became known as the South Dakota Agricultural College.

2. Purpose—The College is devoted to advancing the interests of practical education, its purpose being to give men and women such training as will best fit them for the active duties of life, whether it be in the fields, the shops, the house, or in the class or counting rooms.

In the act of the legislature establishing the institution it

was designated "The Agricultural and Mechanical College," and in the Congressional act these colleges were spoken of as "of Agricultural and Mechanic Arts." While the School is popularly called the "Agricultural College," the mere precedence of the term does not make it more agricultural than mechanical. Although the work of the institution is largely scientific, it is of such diversified character that the student can pursue work along almost any line which his tastes dictate. The aim of all the work offered is to fit young people to occupy ably any position they may be called upon to fill; and to make better and more intelligent citizens of them.

A constant effort is made to reach the masses of the people in the state and interest them in the applications of science to industrial pursuits, and in the more general improvement of their home life and every day activities.

3. LOCATION—The College is located in the east central part of the state, upon an eminence one mile from the business center of the city of Brookings, and four miles from the Big Sioux River.

Brookings has a population of nearly three thousand five hundred thrifty, intelligent and hospitable people. Its streets are lined with trees and there are very few houses where there are not well kept lawns, upon which are growing trees, beautiful flowering shrubs and plants. It has often been called the "City of Homes."

It is a city of clean morals. No saloon has been allowed within its limits for several years. In the spring election of 1898 the proposition to allow saloons within the city limits was defeated by a vote of three to one; and in the general election of 1896 Brookings county was the banner county of the state in its vote against allowing intoxicating liquors to be sold in the state.

It is situated on the Central Dakota Division of the Chicago and Northwestern railway, three miles from its junction

with the Watertown branch of the same road which makes connections with the main line at this point.

4. SOURCES OF INCOME—By the Congressional act under which South Dakota became a state, one hundred and sixty thousand acres of land were set aside as an endowment for the South Dakota Agricultural College. These lands are not yet quite all selected and none have as yet been sold. A small amount is now being received yearly as rental from the selected lands.

No school lands can be sold for less than ten dollars per acre, so that these lands, when sold, will probably yield an endowment of two million dollars, the interest from which will be sufficient for the needs of the College.

The "Morrill Act" passed by Congress in 1890 provides a yearly appropriation for "the more complete endowment and support of Colleges for the benefit of Agriculture and Mechanic Arts." Under this act the College, at present, receives from the general government the sum of $25,000 per annum.

The "Hatch Act" passed by Congress provides for the establishment of Agricultural Experiment Stations in connection with Agricultural Colleges, and allows $15,000 per year for the maintenance of the same.

The state legislature make biennial appropriations for the support of the College. Appropriating at its last session more than *one hundred thousand dollars.*

5. GENERAL POLICY—It is the policy of the institution to make itself in truth a part of the common school system, first, by continuing the work of the young people from the point in their education where the lower school stops, thus giving them an opportunity to become liberally and practically educated within the boundaries of their own state; second, by assisting in the training of public school teachers, especially in the various sciences.

6. EXPERIMENT STATION.—This department is organized

under the Hatch act of Congress which appropriates fifteen thousand dollars from the Ur ted States treasury each year for its maintenance.

"It shall be the object and duty of said experiment stations to conduct original researches and verify experiments on he physiology of plants and animals,"—enumerating some twenty other lines of research,—"and such other experiments bearing directly on the Agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective states . To aid in acquiring and diffusing among the people of the United States useful and practical information on the subjects connected with Agriculture." The South Dakota station conducts its investigations principally upon the following lines: Live stock, soil, field experiments, greenhouse work, trees and small fruits, chemistry of plant growth and foods, and economic botany, entomology and zoology.

In planning the work of the station the main object sought is to assist the agricultural interests of the state. Education is derived from this in two ways; first, from the student's observation of the actual work; second, by reading the accounts and results of the work which are published in the form of bulletins and are available to any one applying.

B—EQUIPMENT.

1. CAMPUS.—The College campus of thirty acres is beautifully located on an eminence within the corporate limits of Brookings. Under the charge of the horticultural department the campus, ornamented with choice and tasteful varieties of trees and shrubs and laid out with necessary drives and walks is a good example of landscape gardening. Adjoining on the rear is a fifty acre plat which is devoted to horticultural gar-

dens and the United States forestry experiments. This portion is laid out regularly in suitably sized plats with longitudinal streets at appropriate distances apart, thus giving a beautiful and symmetrical effect to the observer from the College buildings.

2. BUILDINGS.—The oldest building on the campus, a three story brick structure known as the "Central Building," was completed in 1885, and is devoted to administrative and instructional purposes. The "South Building," also a three story building, is occupied principally by the experiment station laboratories. The "North Building"is a four story brick building, the first floor of which is used as a chapel room, the other two floors furnishing quarters for the Art and Domestic Science departments. The "Chemistry and Pharmacy Building," the "Drill Hall" and the "Creamery" are all two story buildings of modern design, and well equipped with apparatus.

The "Engineering Hall," the "Plant Breeding Building" and the "Greenhouse," by their substantial and imposing appearance, add much to the beauty of the campus, and furnish ample room for the departments which occupy them.

The present year has seen completed a modern central heating plant and a large barn. Class rooms and fine laboratories are provided in the barn for work in soil physics, agriculture and allied subjects.

3. FARM.—Set apart as the College farm is a tract of three hundred and twenty acres near the campus, about sixty acres of which is used by the Agricultural Experiment Station as an experimental farm. Here the field experiments with field crops, seed germination, and soil preparation are conducted, and the student electing it can witness and actually participate in this scientific work. The remainder of the farm is used as a model stock and dairy farm under the direction of the professor of animal husbandry. Practical work and

experiments involving the best farming practices for this region are given the students.

4. DORMITORIES.—Originally the institution provided dormitories for both sexes. But the attendance has increased so much more rapidly than the class room facilities, that it has been necessary to convert the dormitories into rooms for the departments, so that now no such living arrangements in connection with the College are provided.

5. LABORATORIES.—The work of the institution being so largely scientific in nature, well-fitted laboratories have been provided in all those departments where their use is made necessary by the most modern and approved educational methods. The farm with its equipment together with the horticultural gardens and the greenhouse serves as a laboratory for the departments of Horticulture and Agriculture.

6. GYMNASIUM.—The spacious gymnasium for the boys and the commodious physical culture rooms for the girls are well equipped with dumb-bells, Indian clubs, chest weights and other apparatus to which additions are being made from time to time. Both of these departments have connected with them bath and toilet rooms of the most approved design, and the physical training is under the direction of competent instructors.

7. ATHLETIC GROUNDS.—In connection with the gymnasium a tract of land leased by the College is used as a place for holding outdoor exercises and sports of an athletic character. These grounds are enclosed with a high board fence, and a comfortable amphitheater affords a large seating capacity to spectators.

8. LIBRARY AND READING ROOM.—The library, occupying rooms on the first floor of the Central Building, contains over six thousand bound volumes and as many pamphlets. The institution being a repository for the government, it contains quite a number of the governmental publications.

Care has been exercised in the selection of books in order that each department may have proper books of reference at the disposal of the students taking work in that line. The books are arranged according to the Dewey system of classsification, and the card catalogue has been completed up to date, thus facilitating the use of the library. The reference portion is well supplied with proper books of reference. The files of all the standard scientific and literary magazines are kept bound. The reading room portion is supplied with the leading periodicals and newspapers. The library is nearly all the time, day and evening, at the disposal of students for the purpose of study and reading.

9. Museums.—The idea that museums are valuable as educational factors only as they furnish illustrative material for study has obtained in the collection of the various specimens and their arrangement in the several department museums. The Zoological, Botanical, Geological, Art, and Engineering departments have made especially good beginnings in getting together material for that purpose. Constant additions are being made, thereby increasing their worth as adjuncts to laboratory work. The different collections are kept in the departments to which they belong. Permanent and commodious rooms for the museums are projected and it is hoped they will materialize in the near future.

10. General Study Room.—A general study room for the young ladies, in conjunction with the necessary retiring rooms and toilet facilities, occupies part of the basement of the North Building. The ladies of Brookings have very generously furnished part of the fittings necessary to its homelike appearance.

11. Lecture and Class Rooms.—The class rooms are fitted to accommodate from thirty to fifty students each. Lecture rooms are fitted with arm-rest chairs for ease in taking notes. The main lecture or assembly room is provided with

opera chairs for seating about four hundred, and a fine electric dissolving projection lantern for illustrative purposes.

12. SANITARY CONDITIONS.—Recently, efforts have been directed to improving the sanitary conditions about the campus. The old methods have been superseded by sanitary plumbing throughout the building and a new sewerage disposal plant. The water supply is one of the very best, the water being of good quality and very pure. The rarity of zymotic and infectious diseases among the students is a proof that the sanitary conditions are excellent.

13. HEATING.—Good heating arrangements are a necessity in almost any climate but in a cold climate their importance increases. The main buildings are all heated with steam generated in a central heating plant. This plant also furnishes steam for running the machinery in the shop and generating electricity for lighting. Largely for purposes of cheerfulness and ventilation, fireplaces are provided in some of the offices.

14. LIGHTING.—The College owns and controls its own electric light plant, thus making the light at all times available and economical. Some of the rooms are prov ded with gas, which for purposes of illumination is used in Wellsbach Burners, making a brilliant light.

15. POSTAL FACILITIES.—The College furnishes first-class postal facilities, the mail of the students being delivered in one of the buildings at convenient times during the day, making it unnecessary for them to walk to the city postoffice.

C—ADMINISTRATION.

1. GOVERNING BOARD.—By an act of the legislature approved March 10, 1897, provision was made for the appointment of the "Regents of Education," who should have charge of all the educational institutions of the state.

The law is, "The Governor, by and with the consent of the senate, shall appoint five persons of probity and wisdom from among the best and best known citizens, residents of different portions of the state, none of whom shall reside in the counties in which any of the state educational institutions are located, who shall be designated the regents of education." The terms of office of these regents, when first appointed were of different lengths and after the first terms, are each six years, thus making it a continuous body. Vacancies are filled by the Governor during the recesses of the senate. "The board shall organize by electing one of their members president, and by the elections of a secretary. Thus qualified and organized they shall have authority to make such rules as are necessary for their own government as a board and shall immediately assume the exclusive control and management of all the educational institutions which are maintained either wholly or in part by the state." Along this line the powers and duties of the regents are defined, among which important ones may be mentioned, to employ or dismiss members of the different faculties and other agents, to determine the proper number of teachers in said faculties, also their compensation and terms of employment, to establish departments, to settle upon courses of study, to determine the rules to be enacted for the government of students, to decide upon text books to be used, to fix tuition fees, to guard against unwise duplications of departments, to confer degrees, to control the United States Experiment Station, and to promote education among the farmers by providing for institutes, in fact to make all regulations as to the executive and instructional functions of the educational institutions of the state. The regents govern the College largely enough through a regents' committee.

2. FACULTY.—The faculty, consisting of the president and professors, all of whom are elected by the regents, determines in large part the general policy of the college. The professors

are heads of the different departments of instruction which they represent and are responsible to the president who is in charge of all matters of administration. The president in turn, is responsible to the regents for the whole work of the institution. In order to aid the president in his executive duties, he appoints, at the beginning of each college year, certain faculty committees, which take up such work as may be assigned them by the president and faculty and thus greatly facilitate the transaction of business and economize the time of the faculty. (For list of committees for 1904-1905 see page 8)

3. DEPARTMENTS.—The educational and experimental work is performed by the following departments, the work and equipment of which are described in detail under Part IV.

DEPARTMENT.	ABBREVIATIONS
Agricultural and Animal Husbandry	Ag.
Art	Ar.
Botany	Bt.
Chemistry	Ch.
Civil and Agricultural Engineering	Ce.
Commercial	Cl.
Domestic Science	Ds.
English	Eh.
Experiment Station	Ex.
Geology and Agronomy	Gl.
History, Economics and Philosophy	H-P.
Horticulture	Ho.
Languages, (French, Latin and German.)	Ln.
Mathematics and Astronomy	Ms.
Mechanical Engineering	Me.
Military	Mt.
Music and Physical Culture	Mu.
Pharmacy	Py.
Physics and Electrical Engineering	Ph.
Preparatory	Pr.

Zoology and Veterinary Medicine Zo.

4. Student Affairs.—Students are allowed wide latitude in carrying on affairs which vitally concern themselves, such as athletic, literary, musical and social organizations. The faculty, in all these matters, retains an advisory interest and aims to assist the students in every possible way in making these elements especially helpful to the student body as a whole. In the matter of social enjoyments the faculty is disposed to allow a reasonable amount of time for recreation, and endeavors to contribute as far as possible towards making the students happy and contented.

5. Required Exercises.—There are certain requirements in the way of work required of every student, among which are military exercises and physical culture. These subjects are thought to be of sufficient importance that every student can take them with profit.

6. Students' Living Arrangements.—The faculty maintains the right to pass upon the living arrangements of every non-resident student. Residents of the town with whom students are boarding or lodging are requested to co-operate with the faculty in the efforts to improve the general condition of the students by exercising over them a careful supervision and reporting to the faculty any misconduct on the part of the students which may come to their notice. Upon coming to Brookings students should report at once to the president, who will furnish all possible information with reference to their living arrangements.

7. Student conduct.—The chief end of school life being to obtain thorough mental and moral discipline, it becomes incumbent upon the faculty to make the conditions as far as possible conducive to that attainment. No set regulations are expected to cover every contingency arising, but it is necessary that all students recognize the fitness and importance of such restraints as are in force, and co-operate in securing their ob-

servance. In the absence of any rule applying, the student's own good judgment should suggest the proper procedure.

8. TUTORING.—Students absent from class or College exercises or otherwise being unable to keep up with the work of their classes, will at the suggestion of the head of the department arrange with a regular tutor of that department for assistance.

D—SPECIAL INFORMATION FOR STUDENTS.

1. TIME TO ENTER.—Students are admitted at any time and assigned to such classes as they are found best fitted to enter, but it is much better to commence at the beginning of the college year. No reduction in college fees is made wnen the student enters after the beginning of a term, and if a student enters late he will not under any condition be allowed to hold a class back. If a tardy beginning is imperative the student must arrange with a tutor to assist him in bringing up his work, in order that he may go on understandingly and without hindrance to the class.

2. EXPENSES OF STUDENTS.—No young person should be deterred from obtaining a liberal education when such advantages as this college offers can be had at a nominal price. The registration fees are four dollars per term and are payable at the time of registration. Books and stationery are furnished by the student. A laboratory fee of one dollar per term is charged for the use of each laboratory in which a student takes work. An estimate of the yearly expenses of a student is given below in three grades, viz:

	LOW.	AVERAGE.	LIBERAL.
Tuition and Incidental Fees	$12.00	$12.00	$12.00
Board and room	110.00	130.00	160.00

Laundry	12.50	15.00	25.00
Books and Stationery	15.00	25.00	35.00
Laboratory Fees	0.00	3.00	8.00
	$149.50	$185.00	$240.00

Male students are expected to purchase uniforms, which range in cost from $12.00 to $18.00, and female students must furnish themselves with special costumes, which are not necessarily expensive, for use in physical culture.

3. Terms and Vacations.—The regular work of the College is carried on continuously during the Fall, Winter and Spring terms, which are designated in the schedule as F. W. S. The principal vacation of the year occurs in the summer, from the middle of June nearly to the close of September. The work of the Fall term begins in 1904, on September 21st, and continues until December 14th, a period of twelve weeks of five days' work each. The winter vacation will begin at noon on December 14th, and last until noon January 2nd, 1905, when the work of the winter term will begin. The winter term will last from January second, to March twenty-fourth, a period of twelve weeks of five days' work each. The spring term will begin March 27th, continuing twelve weeks, of five days' work each, and ending June 15th, after all the exercises of commencement week are completed. The date indicated as the time when a term will begin refers to the day that recitation and laboratory work is begun. The matter of classifying should all be arranged before this date and such provision is made in the calendar announcements.

4. Living Arrangements.—Boarding facilities are not provided in connection with the College. Every effort is made, however, by the officers of the institution to secure suitable and satisfactory boarding places for students and a special faculty committee has this matter in charge.

Good rooms can be secured in the city at private houses or

hotels for 50 cents per week and upwards. There are also many places where rooms and board can be obtained at reasonable rates. A list of approved available places for boarding or rooming, can, at any time, be obtained from the president of the College. The Christian Associations make it a point at all times to assist new students in finding proper living accommodations.

5. STUDENT LABOR.—The terms are so distributed through the year as to give the longest period of vacation possible in the summer, thus enabling students to earn money. There is a limited amount of paid labor about the institution which can be done by students and it is the policy of the regents to give as much work to deserving students as is consistent with the best interests of all. However, no one should expect to earn his entire expenses while at college and doing school work, or be assured of an income in advance from paid labor.

6. SCHOLARSHIPS.—The following article from the law, defining powers and duties of the regents of education is self-explantory. "The regents of education shall fix all rates of tuition and of other fees to be paid by students, but such rates must be the same in all the different institutions. They may receive free of tuition two students appointed by each senator and one by each representative of the state legislature in any one of the institutions under their control, provided that the period for which appointment was made shall expire with the term of office of said senator or representative and provided that such appointees shall comply with all the rules and requirements of the institution which they desire to enter. No student, however, shall receive any other gratuity whatever." The regents of education make this article operative in the case of this institution.

7. CO-EDUCATION.—Recognizing the value of industrial training as a feature of a practical institution for the masses, the College authorities have provided the various shops and

laboratories in which the young men of the state may become familiar with the use of the different tools required in the principal mechanical industries. These special facilities are not confined to the young men, but special departments such as Domestic Science, Art and Music have been established, so that the young lady students may have opportunities to fit themselves for a keener appreciation of the realities and enjoyments of life in the home, the school room, the store, the office or the factory. The young woman will profit as much by the introduction of rational methods into her education as the young man, and while the shops, studios and laboratories may be used in some instances by the young man, and in others by the young woman, they are all open to both and in most cases students of both sexes will be seen working side by side. Instead of military drill the yong lady students are required to take physical training.

8. Military Requirements.—The national law organizing and endowing these agricultural colleges requires that military science shall form part of the instruction offered. For the regulations governing these requirements, see Military Department, Part IV.

9. Physical Culture.—Female students are required to take Physical Culture twice a week for the first three continuous years of the time they are students in the institution, or until the Sophomore year is completed. Students taking Physical Culture will furnish special costumes for the same as indicated by the instructor. In regard to excuses from Physical Culture, the same rule holds as in the case of military exercises.

10. Chapel Exercises.—Chapel exercises are held on each college day and all students are cordially invited to attend. The exercises on Tuesday usually consist of announcements and an address by some competent person. Attendance on Tuesdays is required of all students.

11. PUBLIC ENTERTAINMENTS.—In all cases of public entertainments the students taking part are required to submit their exercises first to the officer regularly in charge of such work and to rehearse before the Professor of Oratory at least ten days before the day of public performance, and as often as the instructor may designate.

12. ATHLETICS.—Many forms of athletic exercises are practiced and are recommended and encouraged by the officers of the College. Under the auspices of the local organization and a number of College Athletic Associations of the state, all kinds of athletic sports are practiced and encouraged. The local representatives contest at the "State Meet" once a year for athletic honors. Students should understand, however, that their studies must receive the first consideration; and that the purpose of athletic exercises is to develop gentlemanly and ladylike qualities in those who participate in them.

13. STUDENT ORGANIZATIONS.—In the matter of student societies, the faculty allows the greatest freedom consistent with the general welfare. Those organizations which receive financial support from the student body and the general public are required to submit, at the close of the school year a detailed report to the proper committee from the faculty.

14. LITERARY SOCIETIES.—There are two literary societies, the Athenian and Miltonian, composed entirely of college students. These societies meet on every Saturday evening for literary exercises. A generous and fruitful rivalry for college honors exists among them, stimulating each to its best efforts. These societies are an important factor in the student's education and all are strongly advised to become members. All preparatory students are expected to become members of the Franklin society. The work of the society is carried on under the supervision of the head of the preparatory department and has a special function as preparation for college society work.

15. Christian Associations.—The young men's and young women's Christian associations of the College are voluntary organizations. The purpose of the local organizations is to promote growth in grace and Christian fellowship among their members. They seek to surround the students with an earnest spiritual atmosphere; to minister to their intellectual, moral and social well being; and to exert a voluntary Christian influence in the college which shall be strong and helpful. As members of the Christian inter-collegiate movement they receive all the benefits which accrue from such fellowship and from personal supervision of state and international college secretaries. Each association maintains prayer meetings and weekly devotional services.

16. Oratorical Association.—The purpose of this organization is to promote the art of public speaking among the students of the College. . Each year it sends a representative, elected in a preliminary contest, to the inter-collegiate contest of the state. In order that this contestant may fully represent the College, the faculty has imposed the requirement that those competing for this honor must be pursuing regular work for the Bachelor's degree above that of the Freshman year.

17 Other Organizations.—Among other organizations may be mentioned the Athletic Association, which concerns itself with the athletic interests of the college; a debating club; and various other technical societies, such as the Art Club, Pharmacy Club, Choral Union, Euterpe society, etc., each occupying its own sphere of influence.

18. Student Publications—The "Industrial Collegian" is a sixteen page monthly magazine published by the students of the College. The "Collegian" aims not only to be an organ of the student body but a mirror of student life at this institution. The editorial staff is composed of an Editor-in-Chief, a Business Manager, and one member selected by each regularly organized literary society in the College. The Editor-in-

Chief and Business Manager are selected at the close of each Winter term by the students who are at the time of such election bona-fide subscribers of the "Collegian." The "Quirt" an annual gotten out by the junior class is a good representative and an exponent of college life.

19. COLLEGE WORK.—The instructional work of the institution divides itself naturally into two main classes, studies which lie at the foundation of the Agricultural processes, and those which bear more directly upon technological lines of work such as Mechanical, Steam and Electrical Engineering. The work of the College is moreover offered in such a way as to be best adapted to individual characteristics and needs and at the same time to secure for all a well rounded and symmetrical development.

20. GENERAL CONDITIONS OF ADMISSION.—The candidate for admission to the College must be at least fourteen years old and of good moral character. Students applying for entrance to the Preparatory department must present evidence that they have completed the work of the public schools as far as the ninth grade; and no one is allowed to pursue the work of the Sub-Freshman year or higher work until grades in the Preparatory course have been obtained. Before entering upon any college work, students must present satisfactory evidence that they have completed the prerequisites to that work.

21. TIME OF ENTRANCE EXAMINATION.—The two days immediately before the opening of each term will be devoted to examining students applying for admission, both to the College and the Preparatory department.

22. ENTRANCE CONDITIONS.—A student may be admitted to the College without having passed in one or two of his entrance studies. These shall stand against him and must be cleared up within one year after entrance or the student will be required to take the subject with the regular classes.

23. CREDITS FROM EXAMINATIONS.—Students will be al-

lowed to take examinations in any subject offered without being regular members of the class pursuing that subject, if they have standings in all the prerequisites to that subject, provided that the head of the department concerned is convinced that the subject has been covered in a satisfactory manner; and have passed in the subject, students shall receive due credit therefor.

24. Admission from Other Institutions.—Students will be admitted to the College upon certificates from other reputable institutions, provided that these show that the students were honorably dismissed from those institutions, and have satisfactorily completed the work for which credit is asked. The College reserves the right, however, to cancel grades accepted from other schools should the student be found deficient in the subjects for which credit has been given.

25. Special Students.—Students of mature years who have passed in the work of the Preparatory department, may be allowed to pursue special studies if not candidates for a degree, but they must satisfy the faculty that they are qualified to take up the studies desired.

26. Method of Registration.—The student should obtain a classification card in the registrar's office upon which is written the names of the subjects to be pursued, according to the rules governing classification. The classification committee of the faculty will furnish all possible assistance in classifying students. New students must also fill out and file with the registrar cards giving desired information concerning themselves. Standings from the public schools or other educational institutions should also be filed with the registrar at this time. Upon receipt of the fees for the term, the secretary of the College stamps the classification card which is then to be presented to the different instructors under whom work is to be taken for their signatures, and in order that they may also enroll the student in their classes. This card should then be

returned to the registrar. In no case should it be retained longer than three days after being issued.

27. COURSES DEFINED.—A full recitation course is a five hour per week lecture or text book study for one term, and is designated as a small (a) course. A full laboratory course is a ten hour per week exercise for a whole term and is designated as a small (b) course. A course combining recitation and laboratory work is designated as a small (a, b) course. No student will be permitted to take more than four and one-half nor less than three courses in any one term without special permission from the classification committee.

28. GRADES.—All grades are reported to the registrar in figures on a scale of 100 as perfect. Grades are reported to students in classes as follows: Class "A" representing grades between 90 and 100. Class "B" from 80 to 90. Class "C" from 70 to 80. Classes "D" and "F" for all grades below 70. Students having a term grade of "A" are not required to take final examination with their class. Grade "D" indicates that the student is conditioned, and may make up the work under a tutor, providing that this is done before the course is again offered. "F" indicates that the subject in question must be repeated with a regular class before a passing grade is obtained.

In determining a final grade ordinarily twice the recitation grade is added to the final examination grade and one-third of the sum is the "final grade." Large latitude is given the teacher, especially in the more advanced work, in the method of determining the student's "final grade."

29. CONDITIONED STUDENTS.—No student is allowed to register for advanced work who is conditioned in more than one course pursued in any one preceding term, neither will a student be permitted to register for advanced work at the beginning of any college year with more than one condition from previous work except when the student by permission changes

his major and minor and satisfies the faculty that he is unable to remove conditions.

30. Attendance and Dismissal.—Students are expected to attend regularly all the exercises of the classes to which they are assigned from the date of their classification. When once classified they are required to be present from the beginning of each term thereafter, until regularly dismissed.

When a student finds it necessary to be absent he should get an excuse in advance, if possible. Otherwise it must be applied for at the earliest possible date after return to work. Excuses will be granted only when the absence seems necessary.

All omitted work must be made up within two weeks after return to College duties, unless the health of the student requires a longer period. Application for this extension should be made to the president when the student returns to work. This omitted work must be made up according to the direction of the instructor and at times designated by him or the tutor in charge of the same. Should a student find it necessary to sever his connection with the institution before his work is completed at any time during the term, he should report to the president his reasons and secure an honorable dismissal; otherwise no standings will be entered in the records giving him credit for work done during the term.

31 Charge for Tutoring.—The charges which tutors are allowed for giving instruction are graded according to the nature of the work and the number of students taking work together, and for single periods, the maximum length of which is one hour, are shown by the following scheme:

Number of students	1	2	3	4	5	6 or more
Preparatory subjects	15c	25c	35c	40c	45c	50c
Sub-Freshman subjects	20c	30c	40c	45c	50c	55c
Fresh. and Soph. subjects..	25c	35c	45c	50c	55c	60c
Jun. and Senior subjects ..	30c	40c	50c	55c	60c	65c

In the absence of any instruction from the teacher as to the time a student should spend with a tutor in making up work, the tutor should see that the student covers the work which the teacher has assigned.

Students will be held responsible by the faculty for the payment of tutor fees. These must be paid to the respective heads of departments who will hand the same over to the tutors as soon as satisfactory reports concerning the work done have been received from the latter.

Should a student be absent from an appointment which has been made with a tutor, he shall be required to pay the same fee as if he had been present.

32. DEGREES.—The College offers but two Baccalaureate degrees, Bachelor of Agriculture (B. Ag.) and Bachelor of Science (B. S.). For either degree the student must complete in a satisfactory manner the work of one of the schemes mentioned in 35. These include not less than forty-two courses above the Sub-Freshman year exclusive of military. The degree of Master of Science may be conferred upon students who already hold the Baccalaureate degree, and who complete an additional amount of work equal to fourteen courses to be chosen from not more than two departments, in each of which credit for six collegiate courses has already been obtained, the advanced work to be done as prescribed by the faculty. Eight or more of these courses, constituting the "major," must be chosen from one department. At least one year of this work must be done while in residence.

33. DEPORTMENT.—Every student is allowed the fullest freedom of conscience and is supposed to have well grounded habits of politeness, industry, punctuality and integrity, but certain faculty regulations are necessary.After being absent from any class duties, the student must present to the instructor a statement from the executive office showing that he has been re-instated in the class. Smoking is prohibited

upon the College grounds. Few rules are made by the authorities, but for disregard of duties, the breaking of rules, or any ungentlemanly or unladylike conduct proper punishment will be inflicted.

34. Special Courses.—The College also offers special courses in several important and practical lines of work. These are mentioned in Part IV, in the connection with the departments principally concerned and are as follows:

1. Two years' work in Pharmacy.
2. Two years' work in Agriculture.
3. One year's work in Business Branches.
4. One year's work in Amanuensis Branches.
5. Two term's work in Steam Engineering.
6. One term's work in Dairy Science.
7. One term's work in Domestic Science.
8. Special work in Vocal and Instrumental Music.
9. Special work in Art.
10. Lectures on Animal Husbandry, six weeks.
11. Lectures on Farm Practice, six weeks.
12. Lectures on Horticulture, six weeks.
13. Lectures on Veterinary Medicine, six weeks.

35. Schemes of Study.—The work leading to a Bachelor's degree may be done according to any one of the courses mapped out on pages 77 to 83. Through these the work of the College is adapted not only to different classes of students, but to individual students themselves. The entrace requirements to each of these groups is the work of the Sub-Freshman year. (See Part IV.)

Before entering upon the duties of the junior year, students should map out their work for the remaining two years, in a manner satisfactory to the professors under whom elective work is to be taken. Heads of the departments and members of the classification committee will give all possible assistance

towards helping the students make a proper selection of subjects.

36. ELECTIVES.—Ten electives in the General Science Course must be chosen according to the following rules:

No work ordinarily offered below the Sophomore year can be elected towards a degree. Where they deem it advisable, the faculty and heads of departments may impose special rules and restrictions governing the choice of electives. In no case shall the student be allowed to elect towards a degree more than three courses in industrial subjects such as cooking and shop work, or exercises of a similar character such as art and music; and these must be from the more advanced grades.

Five of the elective courses must be chosen along some one line of work, that in which the student wishes to specialize most, and shall constitute his "major." Three other courses must be chosen along some second line, and shall be called his "minor." Two general electives are allowed, which are intended to contribute to the general scholarship of the student and should be selected with this object in view.

"Majors" may be chosen in the following departments: Agriculture, Horticulture, Botany, Chemistry, Zoology and Veterinary Medicine, Pharmacy, English, History and Economics, Mathematics, Physics, Mechanical, Civil and Agricultural Engineering, and Domestic Science.

"Minors" may be chosen in the same departments as majors and also in Foreign Languages, Art and Music.

General electives may be chosen from those courses which are offered as major and minor subjects.

37. AGRICULTURAL GROUP.—The following thirty-six courses are required:

Animal Husbandry, one and two-fifths courses; Stock Judging, Breeds of Live Stock.

Astronomy, one course.

Botany, three courses: General.

Chemistry, five courses: Inorganic, Organic, Quantitative, Agricultural.

Economics and Philosophy, three and one-fifth courses; Psychology, Sociology, Race Development, Ethics and Applied Psychology.

English, three courses: English Classics, Theme-writing.

Entomology, one course.

Geology, two courses.

History, two courses: General.

Horticulture, one and two-fifths courses.

Language, six courses: German or Latin.

Mathematics, two courses: Solid Geometry, Trigonometry, Surveying.

Physics, two courses: General.

Zoology, three courses: Invertebrate, Vertebrate, and Veterinary Physiology.

Military.

Seven additional courses are required under the following restrictions:

Those students wishing to specialize along the lines of Agronomy, Animal Husbandry, Dairy or Veterinary, must take the above thirty-six courses and must also elect some one of the four groups, (seven courses) given below:

Agronomy Students must take: Soil Physics, Farm Crops, Farm Mechanics, Rural Economics and Meteorology, three and three-fifths courses.

Stock Breeding and Stock Feeding, one and two-fifths courses.

And must elect two more courses from the departments of Agronomy and Geology, Animal Husbandry, Dairying, Horticulture or Veterinary. Special work along these lines will be provided when practicable.

Animal Husbandry students must take in addition to the

above mentioned thirty-six courses, the following:

Stock Breeding and Stock Feeding, one and two-fifths courses.

Dairying, one course: Veterinary Medicine, three and one-fifth courses.

Elective as in Agronomy, one and two-fifths courses.

DAIRY Students must take in addition to the above thirty-six courses the following:

Dairying, one course; Stock Breeding and Stock Feeding, one and two-fifths courses.

Electives as provided above, four and three-fifths courses.

Veterinary students must take in addition to the above thirty-six courses the following:

Veterinary Medicine and Horse Shoeing, three and one-fifth courses.

Electives as above provided, three and three-fifths courses.

Veterinary students must take in addition to the above thirty-six courses the following: Veterinary medicine and horseshoeing (3 1-5 courses), Electives as above provided 3 3-5 courses)

38. SCHEDULES.—On the next few pages the schedules of the work leading to the Bachelor degrees are given. The notation immediately after the name of a subject indicates its nature and the number of times it occurs a week, "a" referring to the class work, and "b" to laboratory exercises. For requirements in military exercises and physical culture see Part Four. The student must understand that these schemes are models only, in which the elective work is taken from the most important departments. Those wishing to elect other subjects than those indicated in the schemes must choose them according to the rules governing the choice of electives, (See 36).

All male students, excepting those classified in special short courses, not exceeding one term's length, will be required to take military, sufficient to meet the requirements of the War Department.

SCIENTIFIC AGRICULTURE

		FALL.	WINTER.	SPRING.
FRESHMAN	8:30	Inorgan. Chem...a & b 5	Chemistry a & b 5	Gen. Botany a 2, b 3
	9:30	Geometry a 3	Trigonometry a 5	English Classics a 5
	10:30	Stock Judging a 5	English Classics a 5	Organic Chem... a 4 b 1
	1:15	Gen. Botany .. a 2, b 3	Gen. Botany a 2, b 3	{ Breeds of Live St. .. a 2
	2:15	(		{ Surveying b 2
	3:15	(Military 5	Military 5	Military 5
SOPH.	8:30	Gen. Physics a3, b 2	General History a 5	Veterinary Physiol... a 5
	9:30	Language a 5	Language a 5	Language a 5
	10:30	Invertebrate Zool a 3 b 2	Gen. Physics a 3 b 2	General History a 5
	1:15	Quant. Chem., ... b 5	Vertebrate Zool... a 2 b 3	Agr. Chemistry.. a & b 5
	2:15			
	3:15	Military 5	Military 5	Military 5
JUNIOR	8:30	Soil Physics a 2, b 3		
	9:30		Geology a 5	Dairying..... b 5
	10:30	Geology a 5	Farm Crops a 2, b 3	
	1:15	Language a 5	Language a 5	Language a 5
	2:15	Horse Shoeing b 2	Veterinary Med. a 3	{ Stock Breeding a 2
	3:15	Theme Writing a 3	{ Theme Writing a 1	{ Veterinary Medicine a 3
			{ Military Lectures .. a 1	{ Psychology a 3
				{ Theme Writing a 1
SENIOR	8:30	Horticulture.... a 3, b 2	{ Rural Economics .. a 3	Stock Feeding a 3
			{ Stock Feeding a 2	Entomology..... a 3 b 2
	10:30	Astronomy a 5	Horticulture a 2	Ethics & Applied Psychol-
	1:15	Veterinary Medicine.. a 5	Race Development ... a 5	ogy..... a 5
			Veterinary Medicine .. a 3	{ Meteorolgy a 3
	2:15			{ Landscape Gardening a 2
	3:15	Sociology a 3	Farm Mech. b 2	Forestry..... a 3
			Military Lectures a 1	

SPECIAL COURSE IN AGRICULTURE

FIRST YEAR

	FALL.	WINTER.	SPRING.
8:30	Ele. Physics a 3 b 2	Horticulture a 2	
9:30	Horticulture a 2 Stock Judging ... a 3	Ele. Physics a 3, b 2	Ele. Physics a 4 b 1
10:30	English a 5	English a 5	English..... a 3
1:15		Elocution a 1 Stock Judging a 2	Breeds of Live Stock. a 2
2:15	Horse Shoeing.... b 2 Elocution a 1	Veterinary Medicine .. a 3	Veterinary Medicine a 3 Elocution..... a 1
3:15	Military 5	Military 5	Military 5

SECOND YEAR

8:30	Chemistry a & b 5	Chemistry a & b 5	Stock Feeding a 3
9:30	Dairying b 5	Horticulture a 5	Practical Agr. a 3
10:30		Practical Agr. a 3 Stock Feeding a 2	Chemistry..... a 4 b 1
1:15	Veterinary a 5	Carpentry b 3	Forging..... b 3
2:15	Practical Agr. a 3		Stock Breeding a 2 Forestry a 3
3:15	Military 5	Military 5	Military 5

HORTICULTURE

		FALL.	WINTER.	SPRING.
FRESHMAN.	8:30	Inorgan. Chem... a & b 5	Inorgan. Chem. .. a & b 5	Gen. Botany a 2, b 3
	9:30	Geometry a 3	Trigonometry a 5	English Classics a 5
	10:30	Stock Judging a 5	English Classics a 5	Organic Chem.... a 4 b 1
	1:15	Gen. Botany .. a 2, b 3	Gen. Botany a 2, b 3	Breeds of Live St.. a 2
	2:15			Surveying..... b 2
	3:15	Military 5	Military 5	Military 5
SOPH.	8:30	Gen. Physics .. a 3, b 2	General History a 5	Physiology..... a 4 b 1
	9:30	Language a 5	Language a 5	Language a 5
	10:30	Inverteb. Zoology a 3, b 2	Gen. Physics a 3 b 2	General History a 5
	1:15	Quantitative Chem... b 5	Vertebrate Zool... a 2 b 3	
	2:15			Forestry..... a 3
	3:15	Military 5	Military 5	Military 5
JUNIOR.	8:30	Horticulture a 3 b 2	Pomology a 3	Amer. Institutions... a 5
			*Floriculture a 2	
	9:30		Geology a 5	Entomology..... a 3 b 2
	10:30	Geology a 5	Farm Crops a 2, b 3	
	1:15	Language a 5	Language a 5	Language a 5
	2:15			
	3:15	Theme Writing a 3	Theme Writing a 1	Theme Writing a 1
			Military Lectures .. a 1	Psychology a 3
SENIOR.	8:30	Soil Physics .. a 2, b 3	Rural Economics .. a 3	
			Stock Feeding a 2	
	9:30		Horticulture a 2	
	10:30	Astronomy a 5	Race Development ... a 5	Ethics and Applied Psychology..... a 5
	1:15			Meteorology a 3
				Landscape Garden... a 2
	2:15	English Literature ..a 5	Structure & Style a 5	Modern Essayists a 5
	3:15	Sociology a 3	Military Lectures a 1	

*Elective

DOMESTIC SCIENCE

		FALL.	WINTER.	SPRING.
FRESHMAN.	8:30	Inorg. Chemistry a & b 5	Inorgan. Chem. .. a & b 5	General Botany .. a 2 b 3
	9:30	Geometry a 3	Trigonometry a 5	English Classics a 5
	10:30	Invertebrate Zool a 3 b 2	English Classics a 5	Organic Chem... a 4 b 1
	1:15	General Botany..a 2 b 3	Gen. Botany a 2, b 3	Sewing b 3
	2:15			
	3:15	Ph. Culture 2	Physical Culture 2	Physical Culture 2
SOPH.	8:30	Gen. Physics .. a 3 b 2	General History a 5	Physiology a 4 b 1
	9:30	Language a 5	Language a 5	Language a 5
	10:30	Vertebrate Zool a 2, b 3	Gen. Physics a 3 b 2	General History a 5
	1:15	Quantitative Chem ..b 5	Chem. of Foods .. a & b 5	Foods b 3
	3:15	Ph. Culture 2	Physical Culture 2	Ph. Culture 2
JUNIOR.	8:30	Bacteriology a 2 b 3	{H. N. & Invalid Cook a 2 {H. H. Economy a 3	Amer. Institutions... a 5
	9:30	Foods b 5		Dietetics a & b 3
	10:30		Design a 3	
	1:15	Language a 5	Language a 5	Language a 5
	3:15	Theme Writing a 3	Theme Writing a 1	{Theme Writing a 1 {Psychology a 3
SENIOR.	8:30	{*Art History a 2 {H. H. Sanitation .. a 3	{*Floriculture a 2 {*Art History a 2	{Gen. Hygiene a 3 {*Art History a 2
	9:30			Fabrics a 2
	10:30	Astronomy a 5	Race Development ... a 5	Ethics & Applied Psychology a 5
	1:15		Elements of Geology.	
	2:15	English Literature ..a 5	Structure & Style ... a 5	Modern Essayists a 5
	3:15	Sociology a 3		

*Elective.

GENERAL SCIENCE COURSE

		FALL.	WINTER.	SPRING.
FRESHMAN.	8:30	Inorgan. Chem... a & b 5	Inorgan. Chem. .. a & b 5	⟨ Higher Algebra a 5 ⟩ or Gen. Botany a 2 b 3
	9:30	Geometry a 3	Trigonometry a 5	English Classics a 5
	10:30		English Classics a 5	Organic Chem.... a 4 b 1
	1:15	General Botany.. a 2 b 3	Gen. Botany a 2, b 3	Surveying .. b 2 or
	2:15			Sewing b 3
	3:15	Military 5	Military 5	Military 5
SOPH.	8:30	Gen. Physics .. a 3, b 2		Physiology a 4 b 1
	9:30	Language a 5	Language a 5	Language a 5
	10:30	Invertebrate Zool. a 3 b 2	Gen. Physics a 3 b 2	
	1:15		Vertebrate Zool... a 2 b 3	
	2:15			
	3:15	Military 5	Military 5	Military 5
JUNIOR.	8:30		General History a 5	
	9:30			
	10:30			General History a 5
	1:15	Language a 5	Language a 5	Language a 5
	2:15			
	3:15	Theme Writing a 3	⟨ Theme Writing a 1 ⟩ Military Lectures .. a 1	⟨ Theme Writing a 1 ⟩ Psychology a 3
SENIOR.	8:30			Amer. Institutions ... a 5
	9:30			
	10:30	Astronomy a 5	Race Development ... a 5	Ethics & Applied Psychology a 5
	1:15		Elements of Geology. a 5	
	2:15	English Literature .. a 5	Structure & Style ... a 5	Modern Essayists a 5
	3:15	Sociology a 3	Military Lectures a 1	

MECHANICAL ENGINEERING

		FALL.	WINTER.	SPRING.
FRESHMAN.	8:30	Organic Chem. .. a & b 5	Inorgan. Chem. .. a & b 5	Higher Algebra a 5
	9:30	Geometry a 3 b 2	Trigonometry a 5	English Classics a 5
	10:30	Invertebrate Zool. a 3 b 2	English Classics a 5	Organic Chem... a 4, b 1
	1:15	Ele. Botany a 2 b 3	Mech. Drawing b 5	Surveying b 2
	2:15			Forging b 3
	3:15	Military 5	Military 5	Military 5
SOPH.	8:30	Gen. Physics .. a 3 b 2	Anal. Geometry a 5	Gen. Physics ... a 4 b 1
	9:30	French a 5	French a 5	French a 5
	10:30	Geology a 5	Gen. Physics a 3 b 2	Calculus a 5
	1:15	Shopwork b 3	Shopwork b 3	Shopwork b 3
	2:15			
	3:15	Military 5	Military 5	Military 5
JUNIOR.	8:30	Calculus a 5	General History a 5	
	9:30	El. of Mech. a 5		Steam Engine a 5
	10:30		Dyn. Elec. Machin. a 3, b 2	General History a 5
				Dynamo Electric Machinery a 3 b 2
	1:15	Elect. & Magn. a 3 b 2	Anal. Mechanics a 5	
	2:15	Machine Design b 5	Mach. Design b 3	Psychology a 3
	3:15	Theme Writing a 3	Theme Writing a 1	Theme Writing a 1
			Military Lectures .. a 1	
SENIOR.	8:30	Steam Boilers a 5	Strains in Framed Structures a 5	St. of Material a 5
	9:30		Race Development ... a 5	
	10:30	Astronomy a 5		Ethics & Applied Psychology a 5
	1:15	Kinematics b 5	Engineering Design .. b 5	Engineering Design b 5
	2:15			
	3:15	Sociology a 3	Military Lectures .. a 1	
			Testing Lab. b 4	

ELECTRICAL ENGINEERING

		FALL.	WINTER.	SPRING.
FRHESMAN	8:30	Inorgan. Chem... a & b 5	Inorgan. Chem. .. a & b 5	Higher Algebra a 5
	9:30	Geometry..... a 3	Trigonometry a 5	English Classics a 5
	10:30	Invertebrate Zool. a 3 b 2	English Classics a 5	Organic Chem... a 4, b 1
	1:15	Ele. Botany a 2 b 3	Mech. Drawing b 5	Surveying b 2
	2:15			Forging b 3
	3:15	Military..... 5	Military 5	Military 5
SOPH.	8:30	Gen. Physics .. a 3 b 2	Anal. Geometry a 5	Gen. Physics ... a 4 b 1
	9:30	French a 5	French a 5	French a 5
	10:30	Geology..... a 5	Gen. Physics a 3 b 2	Calculus a 5
	1:15	Shopwork b 3	Shopwork b 3	Des. Geometry b 5
	2:15			
	3:15	Military 5	Military 5	Military 5
JUNIOR	8:30	Calculus a 5	General History a 5	Steam Engine a 5
	9:30			
	10:30	Adv. Physics .. a 3 b 2	Dynamo Electric Mach. a 3 b 2	General History a 5
	1:15	Elect. & Magn. a 3 b 2	Anal. Mech. a 5	Dynamo Electric Machinery a 3, b 2
	2:15	Machine Design .. b 5	Machine Design b 3	
	3:15	Theme Writing a 3	Military Lectures .. a 1 Theme Writing a 1	Psychology a 3 Theme Writing a 1
SENIOR.	8:30	Steam Boilers a 5	Electric Light & Power Dist. a 3 b 2	Design of Power Station a 3, b 2
	9:30	Alt. Currents .. a 3 b 2		St. of Materials a 5
	10:30	Astronomy a 5	Race Development .. a 5	Ethics & Applied Psychology a 5
	1:15		Dynamo Design b 5	
	2:15			
	3:15	Sociology a 3	Military Lectures .. a 1 Testing Lab. b 4	

AGRICULTURAL ENGINEERING

		FALL.	WINTER.	SPRING.
FRESHM'N	8:30	Inorgan. Chem... a & b 5	Inorgan. Chem. .. a & b 5	Higher Algebra a 5
	9:30	Geometry a 3	Trigonometry a 5	English Classics a 5
	10:30	Invertebrate Zool. a 3 b 2	English Classics a 5	Organic Chem... a 4, b 1
	1:15	Ele. Botany a 2 b 3	Mechanical Drawing .. b 5	Forging b 3
	3:15	Military 5	Military 5	Surveying b 2
				Military 5
SOPH.	8:30	General Physics a 3, b 2	Analytic Geometry .. a 5	Gen. Physics ... a 4 b 1
	9:30	French a 5	French a 5	French a 5
	10:30	Geology..... a 5	Gen. Physics a 3 b 2	Calculus a 5
	1:15	Surveying b 3	The & Prac. of Sur... a 3	Plotting b 3
	3:15	Military 5	Military 5	Military 5
JUNIOR.	8:30	Calculus a 5	General History a 5	
	9:30	Irriga. Engineering ..a 5		Hydraulics a 3, b 2
	10:30			General History a 5
	1:15	Topographical Draw. b 2	Analytic Mechanics.. a 5	
	2:15	French a 5	French a 5	French a 5
	3:15	Theme Writing a 3	Theme Writing a 1 Military Lectures .. a 1	Theme Writing a 1 Psychology a 3
SENIOR.	8:30		Strains in Fr. Struct.. a 5	Water Supply Eng.... a 3
	9:30	Road Construction.. a 5	Practical Astronmy... a 3	Bridge Construction a 3 b 2
	10:30	Astronomy a 5	Race Development....a 5	Ethics & Ap. Psycholo. a 5
	1:15	Irriga. Experiments a 3	Sewerage Engineering a 5	Meteorology a 3
	3:15	Sociology a 3	Military Lectures a 1	

PHARMACY.

		FALL.	WINTER.	SPRING.
FRESHMAN.	8:30	Inorgan. Chem a & b 5	Inorgan. Chem..... a & b 5	Physiology a 4, b 1
	9:30	Pharmacy Latin..... a 5	Anatom. Methods.. a 3 b 2	
	10.30	Anatom Methods.... a 3 b 2		Organic Chem a 4, b 1
	1:15	General Botany..... a 2 b 3	Gen. Botany..... a 2, b 3	Pharmacog a 2, b 3
	2:15			
	3:15	Military 5	Military 5	Military 5
SOPH.	8:30	Materia Medica a 5	Materia Medica..... a 5	Materia Medica..... a 5
	9:30	Economic Zoology..... a 5	Pharmacy..... a 5	Pharmacy..... a 5
	10:30	Pharmacy a 5	Pharmacy Lab b 5	Pharmacy Lab b 5
	1:15	Quantitative Chem..... b 5	Chemistry of Foods b 5	Drug Assaying b 5
	2:15			
	3:15	Military 5	Military 5	Military... 5
JUNIOR	8:30	Bacteriology a 2 b 3	General History a 5	General Physics.... a 4, b 1
	9:30	Geometry..... a 3	Trigonometry a 5	Entomology..... a 3, b 2
			Gen. Physics..... a 3 b 2	General History a 5
	1:15	*Veterinary Medicine.... a 5	*Veterinary Medicine a 3	
	3:15	Theme Writing a 3	Theme Writing..... a 1	Psychology a 3
			Military Lectures..... a 1	Theme Writing... a 1
SENIOR.	8:30			
	9:30	Latin a 5	Latin a 5	Amer. Institutions..... a 5
	10:30	Astronomy a 5	Race Development..... a 5	Latin a 5
	1;15		Elements of Geology.... a 5	Ethics & Ap. Psycholo. a 5
	2:15	English Literature a 5	Structure and Style a 5	
	3:15	Sociology a 3	Military Lectures a 1	Modern Essayists.....a 5

*Elective.

PART FOUR

DEPARTMENTS AND WORK

NOTE.—The object of the work offered in Mathematics and Engineering is to give the student a thorough training in the mechanic arts, with special reference to their application to agriculture and the industries of life. Courses of instruction will be given in the principles of mechanical, electrical, civil and agricultural engineering and in their practical application to the industrial arts and pursuits.

THE AGRICULTURAL EXPERIMENT STATION

(Ex.)

JAMES W. WILSON, Director.

Under the provisions of the Hatch Act, of March 2, 1887, the state receives $15,000 annually, from the treasury of the United States for the maintenance of an Experiment Station. By an act of the legislature this institution was made a part of the South Dakota Agricultural College. Its object is to conduct investigations along agricultural lines, publish the results in bulletin form and distribute them to the residents of the state for their information and benefit. It consists of six divisions, namely, Agronomy, Horticulture, Chemistry, Botany and Entomology, Animal Husbandry and Veterinary.

Each of these divisions is in charge of an expert who is also the professor of the same subject in the College.

About sixty acres of the College Farm are set aside for experiments in crop rotations and soil moisture determinations.

Another sixty acres are utilized for the purpose of experiments in horticultural lines, where trees, shrubs and vines are grown in profusion. Co-operation with the United States Department of Agriculture in the adaptation of grains, grasses, forage plants, fruits, trees, shrubs and vegetables for the

Northwest, is being carried on, and as a result many valuable varieties have been introduced which probably would not otherwise have reached us.

Each division is provided with the proper facilities, by the state, to conduct investigations and at least four bulletins are published annually, which are free to the residents of the state. Queries pertaining to the various agricultural interests are answered promptly. The regular bulletin mailing list of the Station numbers over 9000 names. All communications to this department should be addressed to the Director.

DEPARTMENT OF AGRICULTURE

(Ag.)

PROFESSOR WILSON, MR. SKINNER AND MR. WHEATON.

This department includes the Farm, Dairy and Animal Husbandry divisions.

The instruction given in each division is made as practical as possible, to fit the student better for solving the every day problems of farm life. New Grains and forage crops are grown under field conditions and are used in feeding experiments for the economical production of beef, mutton, pork and dairy products.

The college flocks and herds include representatives of fifteen of the leading breeds of domestic animals. Practical work is given daily in score card practice to enable the student to distinguish between the poor and the good, and the good and the fancy kinds of animals, an acquirement necessary for the successful handling of live stock.

In the dairy the student is taught the operation of dairy

machinery, and the best methods of making fancy butter and cheese by actually doing the work. A representative herd of dairy cows is kept to furnish milk for the dairy and to afford the student an opportunity to make comparisons as to performance and individual characteristics.

The following is the work offered.

1 F.—Elements of dairying, b 3, 1:15-3:15. Mr. Wheaton.

A study of the composition of milk, the operation of the different kinds of separators and the testing of milk.

Elements of dairying, by Decker.

Testing of milk and its products, by Farrington and Woll.

2 W.—Dairying, b 2, 1:15-3:15. Mr. Wheaton.

a, Continuation of the Fall term's work.

3 F.—Stock Judging, a 5, 10:30-11:30. Prof. Wilson and Mr. Skinner.

a. Instruction in selecting animals for breeding purposes. detection of unsoundness and blemishes, proper conformation, show yard work and the use of the score-card.

4 S.—Cheese making, b 3, 1:15-3:15. Mr. Wheaton.

b, Process of making cheese under farm and factory conditions.

Cheese making, by Decker, Lectures.

5 S.—Breeds of Live Stock, a 2, 1:15-2:15. Prof. Wilson.

Pre. 3.

a, Study of the various breeds, their origination, characteristics, improvement, adaptability to different climates and the best kinds for special purposes.

6 W.—General Agriculture, a 3, 9:30-10:30. Prof. Wilson and Mr. Skinner.

Pre. 3.

a, How crops grow, preparation of seed bed, cultivation, harvesting, marketing, etc.

Storer's Agriculture.

7 Stock Breeding, a 2, 2:15-3:15. Prof. Wilson and Mr. Skinner.

a, Lectures and references on the laws of reproduction. The result of cross-breeding, in-breeding, etc. A study of pedigrees.

Miles' Stock Breeding and References.

8 S.—Advanced dairying, b 3, 1:15-3:15. Mr. Wheaton.

a, Instruction in the making of fancy cheese, such as the Edam, Gouda, Brick and others.

Lectures and Laboratories.

9 W.—Stock Feeding, a 2, 8:30-9:30. Prof. Wilson and Mr. Skinner.

a, Laws of nutrition, exependiture of energy, balanced rations, composition of feeding stuffs. A comparison of the results of feeding experiments at the various stations, finishing for the market and the economical handling of live stock under South Dakota conditions.

W. A. Henry's Feeds and Feeding and References.

10 S.—Dairying, a 3, 8:30-9:30. Prof. Wilson and Mr. Skinner.

a, A continuation of Fall term.

11 S.—Dairying, b 5, 9:30-11:30. Mr. Wheaton.

Courses one and two combined.

SPECIAL SIX WEEKS' COURSE IN AGRICULTURE.

(From Jan. 2 to Feb. 10, 1905.)

This course is offered to accommodate those, young and old, who cannot avail themselves of the opportunities offered in the long courses. It will cover a period of six weeks and there will be no entrance examination required. The work will consist of lectures, recitations, demonstrations and practical laboratory exercises in the following subjects: Stock judging,

farm methods and implements, crop rotation, corn judging, seed selection and breeding, diseases of domestic animals and their treatment, insects injurious to farm crops and the elements of horticulture, including the cultivation and propagation of vegetables, fruits, trees and shrubs.

THE SPECIAL BUTTER-MAKERS' COURSE.

(From January 2 to March 24 1905.)

This course is designed to fit the young men for creamery operators and managers.

The work embraces the care of dairy cows, stables, milk and dairy utensils; the ripening of cream, pasteurization and sterilization of milk. The discussion and practice of ripening cream with pure and natural culture together with all the latest practical methods of successfully operating a creamery.

The following work is offered:

General Agriculture and Care of Dairy Cows, a 5	8:30
Dairy Lectures, a 5	9:30
Dairy Arithmetic, a 3	10:30
Dairy Engineering, a 2	10:30
Lectures in Botany, Entomology, Horticulture and Zoology, a 3, optional	3:15
Book-keeping, a 3	1:15
Practical Butter-making, b 5	2:15
Bacteriology, a 2	

On successfully completing the term's work offered, the student is entitled to a certificate of efficiency as helper in a creamery and upon completing a full season's work as helper satisfactorily to the butter-maker and manager, with their recommendation, he may receive a certificate of competency to operate a creamery.

COURSE IN DOMESTIC DAIRYING.

(From Sept. 21, to Dec. 14, 1904.)

This course is offered to the class in Domestic science and to special students (young men and women) who desire to become proficient in the art of home dairying, how to make butter and cheese on the farm or in private dairies, the care and management of the same, etc. Completion of this work entitles the student to a certificate of competency to manage a dairy farm or private dairy. The following work in the various courses is offered:

Care and management of dairy cows, a 5.

Testing dairy products, a 2, b 3.

Practical laboratory work in butter and cheese-making, as applied to home and farm dairying, b 5.

Care and management of hand separators and other modern dairy apparatus, b 5.

Dairy bacteriology, a 2.

SPECIAL CHEESE-MAKERS' COURSE.

(Special Work in Dairy Science, March 27, to June 15, 1905.)

The development of dairy interests throughout the state has been very rapid during the past few years, calling for a large number of technical and experienced operators of factories, especially expert butter-makers and men who are competent to advise and direct dairy farmers in the care and management of dairy herds, care and management of milk, etc. Recently there has developed a desire on the part of the dairy farmer in some localities to engage in the manufacture of cheese. A SPECIAL CHEESE-MAKING COURSE IS OFFERED, embracing the manufacture of Young America's, Edam, Gouda, Brick and other styles of fancy cheese and the regular American Chedder factory and flatts.

The following work is offered:

Dairy Lectures, a 5	9:30
Dairy Arithmetic, a 3	10:30
Dairy Engineering, a 2	10:30
Book-keeping, a 3	1:15
Practical Cheese-making, b 5	2:15
Dairy Bacteriology, a 2	10:30

On completion of the work the student will receive a certificate of proficiency as assistant or helper in a cheese factory under a competent and practical cheese-maker, but after obtaining a position as such, the student will be required to report to the dairy-instructor every month. Upon completing a full season's work as helper satisfactorily to the cheese-maker and manager, with their recommendation he may receive a certificate of efficiency to operate a cheese factory.

DEPARTMENT OF ART.

The aim of the work in the Art Department is to train the eye and hand to give free expression to ideas; to develop observation, reflections, and interpretation. Attention is given to drawing and modeling from casts and objects for thorough study of form; painting in oil and water color from nature for appreciation of color; sketching from nature in black and white, and in color to give material from which to construct original designs. Practical application of the principles of decoration is given by work in wood-carving and pyrography and designing for art needlework for the Domestic Science department.

A certificate is given students who satisfactorily complete the art course as outlined.—Arts 1 for two years; Arts 2, 3, 4, 5, 6 one year each.

1 F. W. S. } Drawing, b 3, 1:15-3:15.

This course offers work in full values from casts and still life, giving dicipline in proportion, construction and values. It trains the eye to see accurately and the hand to be a skillful tool in expressing thought.

F.]
2 W. } Applied Free Hand Drawing for work in Public
S.] Schools, a 5, 9:30-10:30.

This course includes object drawing in pencil and charcoal, black board sketching, elementary color, elementary design as applied in basketry, clay modeling, and illustrations for children's lessons. It aims to give students a course they can apply in teaching in public schools.

F.]
3 W. } Theory and Practice of Design, a 3, 10:30-11:30.
S.]

This course includes study of line, spot, value, color, and their application in design. It trains the eye to appreciate good proportion and line and color harmony. Practice in carrying out designs is given in the Demestic Art course and in the Handicraft course.

F.]
4 W. } History of Art, a 2, 8:30-9:30.
S.]

This course takes up the study of art historically. Some of the masterpieces in architecture, sculpture, and painting are studied and discussed.

F.]
5 W. } Oil Painting, b 1, Tuesdays 1:15-4:15.
S.]

Students in this class work from still life for study of color, values, and tone.

F.]
6 W. } Handicraft, b 1, Thursdays 1:15-4:15.
S.]

This course deals with the problems of design carried out in wood carving, basketry, pyrography.

Pre requisite Fine Arts 3.

DEPARTMENT OF BOTANY

(Bt.)

PROFESSOR W. A. WHEELER; MR. THORNBER.

The work in Botany is arranged to give the student a thorough knowledge of plant life. The Botany department occupies the second floor of the new "Plant Breeding Building." It is provided with all the apparatus necessary for biological work, including microtome, microscopes and physiological apparatus.

1	F	General Botany.	a 2, 1:15-2:15 b 3, 1:15-3:15
2	W		a 2, 1:15-2:15 b 3, 1:15-3:15
3	S		a 2, 8:30-9:30 b 3, 8:00-9:30

Wheeler and Thornber

Laboratory work and lectures. A general survey of the plant kingdom with lectures and laboratory work on morphology, physiology and systematic botany.

Coulter's "Plants."

4. F.—Elementary Botany.

a 2, 1:15-2:15
b 3, 1:15-3:15

Thornber.

Laboratory work and lectures. A study of the elements of plant structure with lectures and laboratory work on anatomy and physiology.

Bergen's Foundation of Botany.

5 S.—Pharmacognosy.

{ a 2, 1:15-2:15 }
{ b 3, 1:15-3:15 }

Wheeler.

Pre. 2.

Laboratory work and recitations. Families of medicinal plants; histology of the important drugs; study of the glands, reservoirs or receptacles of the essential parts of the drugs.

Kraemer's Botany and Pharmacognosy.

6 F. }
7 W. }

Mycology.

{ a 1 }
{ b 4 }

Wheeler.

Pre. 1, 2, and 3. Elective.

Laboratory, lectures and reference work. A study of the more important groups of fungi. Especial attention will be paid to those parasitic upon economic plants.

8 S.—Entomology.

{ a 3, 9:30-10:30 }
{ b 2, 9:30-11:30 }

Thornber.

Pre. Zo. 1.

Lectures and laboratory work. A brief survey of the group of insects with a study of the life history of several types. Attention will also be given to the

combatting of insects destructive to economic plants.

Hyatt and Arnus' Insecta.

9 F.—Grasses and Forage plants.

{a 1
{b 4

Wheeler.

Pre. 1, 2 and 3.

Laboratory and reference work. A systematic study of grasses and legumes. Laboratory work upon plants used for forage. References to the more important experiment station literature bearing upon the subject.

Pammel's Grasses of Iowa.

F.
10 W. } Experimental Plant Physiology.
S.

{a 1
{b 4

Wheeler.

Pre. 1, 2 and 3.

Laboratory and reference work. A series of experiments treating of plant functions, with references to important literature bearing upon the subject.

McDougal's Text-Book of Plant Physiology.

F.
11 W. } Taxonomy,
S.

{a 1
{b 4

Wheeler.

Pre. 1, 2 and 3. Elective.

Laboratory and reference work. A systematic study of any one of the following groups:

(a) Liverworts and Mosses.
(b) Ferns, clubmosses and scouring rushes.
(c) Gymnosperms and Angiosperms.

DEPARTMENT OF CHEMISTRY.

(Ch.)

PROFESSOR SHEPARD; MR. HEPNER.

This department is equipped with the latest and most approved appliances for instruction.

The student upon beginning the subject is assigned a desk in the main laboratory. This desk is supplied with a set of reagent bottles, gas and water fixtures. In addition to these a supply of all needful apparatus, such as test tubes, generating flasks, and the like, are furnished The main laboratory which is located on the first floor of the Chemistry and Pharmacy Building, accommodates sixty-four students, all working at the same time.

Upon completing the necessary elementary work the student now finds a quantitative laboratory at his disposal. This laboratory accommodates twenty students working together. It is supplied with all needed quantitative apparatus such as precipitation flasks, desicators, lamps and crucibles.

In connection with the quantitative laboratory is a balance room supplied with high grade Troemer quantitative balances. The work is so planned that the student has laboratory work together with didatic instruction throughout the course.

The experiment station laboratories are also located at this College, and their costly and technical appliances and the practical work in constant progress there are within reach for instruction.

The following courses are offered.

1 F.—Des. Inorganic Chem., a and b 5, 8:00-9:30. Prof. Shepard, Mr. Hepner.

Pre. Ph. 3 and Ms. 5.

a, History of chemistry, elements, compounds, symbols, valence, atomic weights, chemical equations, oxygen, hydrogen, nitrogen, chlorine, bromine, fluorine, iodine, sulphur, phosphorus, silicon and their compounds. Bases, salts, acids and alkalies.

b, Detection of the non-metallic elements and their compounds.

Shepard's Elements of Chemistry.

2 W—Qual. Inorganic Chem., a and b 5, 8:00-9:30.

Pre. 1.

a, The metals and their compounds. Groups of metals, separation of the metals and uses of their compounds.

b, Detection of principal metals and the working of a list of unknowns.

Shepard's Elements of Chemistry.

3 S.—El. Organic Chem.

{a 4, 10:30-11:30}
{b 1, 10:30-12:00}

Prof. Shepard.

Mr. Hepner.

Pre. 1 and 2.

a, The principal classes of organic compounds, the characteristics and properties of each class and the uses of their various compounds.

b, The detection of principal organic compounds.

Shepard's Elementary Organic Chemistry.

4 F.—Quantitative Chemistry, b 5, 1:15-3:15. Prof. Shepard,

Mr. Hepner.
Pre. 1, 2 and 3.
b, The apparatus and its uses. Explanations of methods of quantitative determinations and reports of students' analyses. The quantitative analyses of typical chemical compounds, e. g., calcite, magnesium sulphate, metallic ores and coal. Students will use both the volumetric and gravimetric methods.
Fresenius' Quantitative Chemistry.

5 W.—Chemistry of Foods, a and b 5, 1:15-3:15. Prof. Shepard. Pre. 1, 2, 3 and 4.
a, Study and detection of adulterants in baking powders, milk, butter, cereals, spices, fats and other foods.
b, Determinations of (a).

6 S.—Agricultural Chem., a and b 5, 1:15-3:15. Prof. Shepard. Pre. 1, 2, 3, 4. and 5.
a, Chemistry of fertilizers, feed stuffs, fruits, vegetables, grasses, dairy products and soils.
b, Analysis of fertilizers, grasses, dairy products, feed stuffs and soils.

7 F.—Organic Analysis, a and b 5, 1:15-3:15. Prof. Shepard. Pre. 3 and 4.
a, Physical properties of organic compounds, the general relations existing between classes of compounds, and the transformation from one class into another.
b, Demonstration of (a).

8 W.—Physiological Chem., a and b 5, 1:15-3:15. Prof. Shepard. Pre. 3, 4 and Zo. 1, 2 and 3.
a, Composition of blood, muscle, albumen, fat, bone, gall, liver and products of the glands.
b, Quantitative determinations of (a).

9 S.—Industrial Chemistry, a 5, 8:30-9:30. Prof. Shepard. Pre. 1, 2, 3 and 4.
a, Chemistry of manufacturing glass, paper, sugar, petro-

leum, explosives, acids, water, air, mortars, pigments, pnotography, alkalies and gasses. Demonstrations of examples including water pollution purification, artificial illumination, petroleum testing, fermentation, air contamination, disinfection, ventilation, bleaches and dyeing.

DEPARTMENT OF CIVIL AND AGRICULTURAL ENGINEERING.

(Ce.)

PROFESSOR CRANE.

The aim of the work in this department is to impart a practical knowledge of the principles of land surveying, drainage and irrigation work, road construction, and in fact, all forms of civil engineering applicable to agricultural and municipal work, together with practice in the use of surveying instruments, manuals and tables, as well as the study of theoretical text-books on the subject.

The instruments are placed in the students hands at once and he learns how to handle them from actual experience.

After he has had sufficient practice to understand the text in describing and explaining operations a text book course in the theory of surveying is given to supplement the practice.

Attention is given to the use, care and adjustment of the instruments and the relative values of different forms for particular kinds of work.

The use and distribution of water in growing crops will be studied, the principles of irrigation being supplemented by laboratory and field work.

The following courses are offered:

1 S.—Surveying, b2, 1:15-3:15.
b, Field practice in the use of surveying instruments; computations from field notes; application of trigonometric formulas in surveying computations.

2 F.—Surveying, b 2.
b, A continuation of course 1. Leveling and profile work; use of solar compass.

3 W.—Theory and Practice of surveying, a 3, 1:15-2:15.
a, Study of text; the U. S. Manual; problems in practical surveying.

4 S.—Plotting, b 3, 1:15-3:15.
b, Graphical representations of fields, areas, etc., drawn to scale from field notes; profile drawing.

5 F.—Irrigation Engineering, a 5, 10:30-11:30.
a, A study of the development of irrigation from the earliest times; present application; use and distribution of water.

6 F.—Topographical Drawing, b 2, 1:15-3:15.
b, Representation of topographical features; contour lines; location of irrigation and drainage canals.

7 S.—Hydraulics, a 3, b 2, 10:30-11:30.
a, Study of flow of water and formulas for computation; water measurements; weirs and meters; coefficients of resistance.

8 F.—Road Construction, a 5, 9:30-10:30.
a, Principles, methods and materials used in the construction of roads and pavements; establishing grades; locating culverts and bridges; improvement of rural roads.

9 F.—Irrigation Experimentation, a 3, 1:15-2:15.
a, A general study of irrigation experiments as pursued by the different states and shown in their reports; application of different methods in South Dakota.

10 W.—Sewerage Engineering, a 5, 2:15-3:15.
a, Study of drainage and the disposal of water either by

use in irrigation or by sewer systems and carrying streams.

11 S.—Water Supply Engineering, a 3, 8:30-9:30.
a, Sources of supply, storage purification; distribution; construction of waterworks systems.
Folwell's Water Supply.

12 S.—Meteorology, a 3, 1:15-2:15. Prof. Chilcott.
a, General study of the subject; storms, their formation and course; climatic changes due to man's modification of earth's surface; Signal Service work and reports.

DEPARTMENT OF COMMERCIAL SCIENCE.

(Cl.)

PROFESSOR CROSIER.

The Commercial department occupies commodious quarters on the second floor of the central building. Its rooms are exceptionally well suited to the work of the department and are supplied with tables, typewriters, offices for carrying on business transactions, such as banking, mercantile and post-office work. There are two distinct courses of study offered in this department, each extending over a period of one year; the amanuensis or shorthand course, and the business or commercial course. When the student has saticfactorily completed either course he will be given a certificate of graduation. The applicant for graduation in the amanuensis course must obtain a speed, from general matter, of one hundred words per minute, and transcribe the same on the machine at the rate of thirty-five words per minute. He must also show a thorough proficiency in his spelling, use of punctuation marks and other rules of composition and rhetoric.

Penmanship and business letter writing, while not scheduled as a part of the regular course, are given particular emphasis throughout the year.

The admission requirements to the work of this department are the same as those of the Freshman class. It is both a waste of time and money to study shorthand and business branches before having formed the habit of correct spelling and neatness in written exercises.

The expenses are the same as for any other work in the institution and far below what is usually charged for such instruction. College charges per term of twelve weeks are FIVE DOLLARS which includes the use of a typewriter.

The work is as follows:

AMANUENSIS COURSE.

FALL TERM.

1 Shorthand, 5, 2:15-3:15. Prof. Crosier.
a, Consonant stems, vowels, dipthongs, initial and final hooks and circles, word signs, etc., in logical order. Elimination of vocalization through position; the habit of co-ordination emphasized from the beginning.
Day's Shorthand Manual.

Ln. 13. French, a 5, 9:30-10:30. Prof. Wheeler.
For description of course see department of Modern Languages.

2 Typewriting, 5.
b, Graded exercises on machine to learn key board by touch method; care of machine; business letters, law forms, manifolding, mimeographing; department correspondence, speed practice, binding, folding and filing all kinds of typewritten matter. One hour each day dur-

ing school hours.

Any Standard Typewriting Manual.

3 Elementary Law, a 5, 10:30-11:30. Prof. Crosier.

a, A course of study designed to acquaint the student somewhat with those fundamental principles underlying our specific law; thus enabling him to pursue more intelligently legal analysis.

Blackstone and Walker's American Law used as reference study.

Robinson's Elemetary Law.

4 Commerce, a 5, 1:15-2:15. Prof. Crosier.

a, This course is intended to give the student a practical knowledge of Commercial conditions and methods and thus enable him to better apprehend business.

Clow's Introduction to Commerce.

Military or Physical Culture, 3:15-4:15.

Military or Physical Culture—3:15-4:15.

WINTER TERM.

5 Shorthand a 5, 2:15-3:15. Professor Crosier.

a. Direct dictation of business letters; study of reporting word-signs and contractions; copying from shorthand outlines. This threefold purpose is to enable the student to combine accuracy of outline with facility of hand.

Musick's Universal Dictation.

Graham's I. C. R.

Ln. 14. French a 5 9:30-10:30. Professor Wheeler.

For description of course see department of Modern Languages.

6 Typewriting 5

b. Continuation of work of fall term. One hour each day during school hours. Student required to transcribe all work taken in shorthand.

7 Commercial Law. a 5 10:30-11:30. Professor Crosier.
a, A topical analysis of Contracts. Negotiable Paper, Agency, Partnership and Corporations. An abstract of the term's work is given and the student is expected, by means of class lectures, collateral reading and code study, to develop the outline and thus be able to apply in a practical way the acquired information.
Townsend's Compendium of Commercial Law.
8 Economics a 5, 1:15-2:15. Professor Crosier.
a, Continuation of 5. A more comprehensive study of the principles of economics; laws regulating production and exchange of commodities. A term paper on some assigned topic is required of each student.
Bullock's Introduction to the study of Economics.
Military or Physical Culture. 3:15-4:15.

SPRING TERM.

9 Shorthand, a 5, 10:30-11:30. Professor Crosier.
a, General dictation from Brown's Business Correspondence. Humphrey's Typewriting Manual. Law forms of all kinds. The aim of this term is to complete the student's preparation for actual work.
Ln 15. a 5, 9:30-10:30. Professor Wheeler.
a, For description of course see department of Modern Languages.
10 Typewriting 5
b, One hour each day during school hours. All work of this term to be from shorthand notes. The purpose of this is to give the student the power to read notes readily and transcribe same rapidly. A speed of thirty-five words per minute from shorthand outlines is required for graduation.
11 Economics a 5, 1:15-2:15. Professor Crosier.
a, Completion of 8. The effort here is to further devel-

op the various economic theories and their practical bearing on our industrial activities. Term topic required of each student.

Bullock's Introduction to the study of Economics.

12 Commercial Law a 5, 2:15-3:15. Professor Crosier.

Continuation of 7. Guaranty, Sale of Chattels, Right of Stoppage in Transit, Payment, Law of Tender, Liens, Interest and Usury, Contracts of Affreightment, Bailments, Marine, Fire and Life Insurance, Arbitration, Probate Matters, Real Estate Conveyances. A complete originally developed outline is required in both 7 and 12.

Military or Physical Culture, 3:15-4:15.

BUSINESS COURSE. FALL TERM.

Ln. 13. French a 5, 9:30-10:30. Professor Wheeler.

a, For description of course see department of Modern Languages.

3 Elementary Law. a 5, 10:30-11:30. Professor Crosier.

a, For description of work see Amanuensis Course.

4 Commerce. a 5, 1:15-2:15. Professor Crosier.

a, For description of work see Amanuensis Course.

2 Typewriting 5

b. One hour each day during school hours. For description see Amanuensis Course.

Military or Physical Culture, 3:15-4:15.

WINTER TERM.

13 Business Practice, a 5, 2:15-3:15.

Each student carries on regular retail business, through six offices, with the student body. While all transactions are of the same general nature the results are different, thus creating in the individual student a habit

of self reliance. All work must be of a certain degree of excellency before the next step can be taken. This term's work comprises four hundred different transactions, together with the necessary letters, checks, drafts, notes, etc., that would naturally attend the same in actual business.

Ln. 14. French a 5, 9:30-10-30. Professor Wheeler.
See department of Modern Languages.

14 Commercial Arithmetic, a 5, 8:30-9:30.
a, Short methods in addition, subtraction, multiplication and division, rapid calculation in percentage, interest, discount and ordinary arithmetical processes.

7 Commercial Law. a 5, 10:30-11:30. Professor Crosier.
a, For description of work see Amanuensis Course.

8 Economics, a 5, 1:15-2:15. Professor Crosier.
a, For description of work see Amanuensis Course.

Military or Physical Culture, 3:15-4:15.

SPRING TERM.

15 Business Practice, a 5, 10:30-11:30. Professor Crosier.
a, Business practice, changing work of previous term into wholesale and commission business. All transactions are carried out by students with outside colleges, thereby approaching, as nearly as possible, actual business.

Goodyear's System of Business.
Ln. 15. French a 5, 9:30-10:30. Prof. Wheeler.
See department of Modern Languages.

11 Economics. a 5, 1:15-2:15. Professor Crosier.
a, For description of work see Amanuensis Course.

12 Commercial Law. a 5, 2:15-3:15. Prof. Crosier.
a, For description of work see Amanuensis Course.

Military or Physical Culture, 3:15-4:15.

DEPARTMENT OF DOMESTIC SCIENCE.

(Ds.)

MISS WARDALL.

The department of domestic science stands for a better appreciation and a wider knowledge of the things that make for better homes. While the work is essentially scientific in character, the course has been planned with due regard to cultural needs. The department is very favorably located, occupying an entire floor, and is well equipped for the various lines of work. Charts and exhibits illustrating the chemical compositions of food are found in the class room, general reference books and magazines are found in the general library.

Ds. 1, F., S.—Sewing, b 3, 1:15-3:15. Miss Thornber.
b, This course aims to give students an understanding of the stitches and methods employed in plain sewing. Each student is required to make a suit of underwear. This course or its equivalent is a necessary prerequisite to any other course in needlework offered in the department.

Ds. 2, F., S.—Sewing, b 3, 1:15-3:15. Miss Thornber.
Pre. 1.
b, Plain dressmaking, drafting, cutting, fitting and general dress making. The aim is to give the necessary training to enable the student to do home dressmaking. Each student is required to make a shirt waist suit.
The Vienna Tailoring System is used.

Ds. 3, W.—Sewing, b 3, 1:15-3:15. Miss Thornber.
For Short course students.
b, The work will include plain sewing, dress making and needle work. It will be adapted to the

needs and abilities of the individual.

Ds. 4, F,. S.—Sewing, b 3, Art Needle-work. 1:15-3:15. Miss Thornber.

Pre. 1.

b, Principles underlying drawn work, lace making as Battenberg, Point lace Crocheting, knitting Tatting, Embroidering.

Ds. 5, W.—Household Economy, a 3, 8:30-9:30. Miss Wardall

a, The aim of this course is to set forth some of the principles underlying housekeeping, including the organization of the household, chemistry of cleaning, laundry work, serving of foods and marketing.

Ds. 6, S.—General Hygiene, a 3, 8:30-9:30. Miss Wardall.

a, Reference and lectures are given concerning personal and public hygiene, sanitary and unsanitary conditions in the house, necessary precautions against the spread of disease.

Ds. 7, S.—Selection and Preparation of Food, a and b 3, 1:15-3:15. Miss Wardall.

Pre. Ch. 3, Bt. 3, Ph. 1, 2, 3.

Food principles, effect of heat, occurrence in food stuffs. Cooking and serving of typical foods. Reference, lecture and laboratory methods combine.

Ds. 8, F.—Selection and Preparation of Food, a and b 5, 9:30-11:30. Miss Wardall.

Pre. Ds. 7.

Continuation of Ds. 7.

Ds. 9, F.—Household Sanitation, a 3, 8:30-9:30. Miss Wardall.

a, By references and lectures the following subjects are considered: Situation of the house with regard to soil, drainage and general sur-

roundings, building materials, general arrangement of rooms, water supply, plumbing and heating arrangements. Exercises are given in making skeleton house plans.

Ds. 10, W.—Home Nursing and Invalid Cookery, a 2, 8:30-9:30. Miss Wardall.

Pre. Ds. 7 and 8, Zo. 1 and 3.

a, This course deals with the care of sick in the home and the preparation of food for them. A few lectures are usually given by a physician.

Ds. 11, S.—Fabrics, a 2, 9:30-10:30. Miss Wardall.

Pre. Ch. 3. Bot. 3.

a, Primitive industries such as basketry, spinning and weaving. Fibres used in making fabrics, their preparation and manufacture. Uses for which various fabrics are adapted.

Ds. 12, S.—Dietetics, a and b 3, 9:30-11:30. Miss Wardall.

Pre. Ds. 7 and 8.

The course consists of reference, lecture and laboratory work. Standard dietaries examined, practical dietaries made in the laboratory. Menus worked out according to different standards. Especial emphasis put on the economic side.

Ds. 13, W.—Cooking, b 2, 1:15-3:15.

For short course and sub-freshman students.

No Pre.

The course will consist of lectures, experiments and practical cooking. Subjects to be determined.

SHORT COURSE IN DOMESTIC SCIENCE.

During the winter term a course is offered to any young ladies who may wish to elect it. The object of this course is to awaken a greater interest in the affairs of the home. Sufficient training is offered to make the work practical as

well as suggestive to them in the household.
Floriculture and Home Gardening, a 5..... 8:30- 9:30
Household Economy, a and b 3..... 9:30-11:30
Cooking, b 2..... 1:15- 3:15
Sewing, b 3..... 1:15- 3:15
Music and Art if desired.

DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE.

(Eh.)

PROFESSOR EYERLY; MISS DUBOIS.

In this department the aim is to make the study of language and literature practical in the fullest sense of the term. Language is regarded as an instrument for the performance of a large part of the most important and most delicate work of life. Literature is studied largely with the view both of discovering such principles and processes of thought building as the student may embody in original composition, and of finding such truths as will guide him in his reading, heighten his appreciation of good literature, and quicken his conception of life.

The following courses are given:

1 F.—Rhetoric, a 5, 10:30-11:30. Miss DuBois.

a, The choice of words, phraseology, and special objects of style. Genung's Outlines of Rhetoric is used as a guide, but many exercises are taken from Hills's Foundations of Rhetoric and Scott and Denney's Composition Rhetoric. In connection with the work in Rhetoric throughout the three terms, there will be studied the following English classics: The Sir Roger de Coverly

Papers in the Spectator; Goldsmith's The Vicar of Wakefield; Eliot's Silas Marner; Shakespeare's Merchant of Venice. Students beginning this course are expected to have a practical knowledge of the facts of some advanced grammar. If they are only slightly deficient in this knowledge they may make up the deficiency by taking, along with the Rhetoric during the Fall term, instruction in a special class in Buehler's Practical Exercises.

2 W.—Rhetoric, a 5, 10:30-11:30. Miss DuBois.
Pre. 1.
a, Continuation of course 1. The sentence and the paragraph.

3 S.—Rhetoric, a 3. Miss DuBois.
a, The continuation of course 2. The whole composition.

4 S.—American Literature, a 5, 8:30-9:30. Prof. Eyerly.
Pre. 2.
a, A general survey of American Literature and the study of a few of the most important works.
Occasional essays on assigned topics.

5 W.—English Classics, a 5, 10:30-11:30. Prof. Eyerly.
Pre. 1, 2 and 3.
Milton's L'Allegro, Il Penseroso, Comus and Lycidas; Macaulay's Essays on Milton and Addison; Scott's Ivanhoe; Shakespeare's Macbeth; Coleridge's Ancient Mariner; Lowell's Vision of Sir Launfal.
Bi-weekly essays.

6 S.—English Classics, a 5, 9:30-10:30. Prof. Eyerly.
Shakespeare's Macbeth; Scott's Lady of The Lake; Tennyson's Gareth and Lynette, Lancelot and Elaine, Passing of Arthur; Carlyle's Essay on Burns.
Bi-weekly essays.

7 F., W. and S.—Theme Writing, 3:15-4:15. Prof. Eyerly.
Exercises in description, narration, exposition, and argu-

mentation. In connection with argumentation, Webster's Reply to Hayne, and Burke's Speech on Conciliation with the Colonies, will be studied. This work continues throughout the year, three times a week in the Fall term, and once a week in the Winter and Spring terms.

8 S.—English Literature, a 5, 2:15-3:15. Prof. Eyerly. Pre. 3.
a, An historical view of English literature and the study of some representative masterpieces.
Occasional essays on assigned topics.

9 W.—Structure and style, a 5, 2:15-3:15. Prof. Eyerly
Brewster's Studies in Structure and Style, and Genung's Rhetorical Analysis will be used as a basis of this work.

10 S.—Modern Essayists, a 5, 2:15-3:15. Prof. Eyerly.
Lamb, DeQuincey, Macaulay, Carlyle, Emerson, Matthew Arnold and Ruskin.

11 F.—The Elizabethan Drama or History of the English Language, a 5, 1:15-2:15. Prof. Eyerly.

12 W.—XIX Century Poetry, a 5, 1:15-2:15. Prof. Eyerly.
Tennyson and Browning will be the principal authors studied.

13 S.—Modern Fiction, a 5, 10:30-11:30. Prof. Eyerly.
Scott, Thackery, George Eliot and Hawthorne.

DEPARTMENT OF GEOLOGY, AGRONOMY AND AGRICULTURAL PHYSICS.

(Gl.)

PROF. CHILCOTT. MR. COLE.

In offering the work of this department two objects are sought. First to afford an opportunity for students desiring

a general agricultural education, and those wishing to become specialists along any line of agriculture, to make a thorough study of the soil and its relation to plant growth; and to teach them how to apply the general laws of physics to ordinary farm operations, the planning and construction of buildings and the handling of crops and machinery.

Second, to give all candidates for degrees a thorough understanding of the foundation principles of the subject of geology and their intimate relations to the various activities of life.

The work in this department has been greatly strengthened by the readjustment of, and addition to the courses, the addition of a large and well equipped laboratory and class rooms for the work in Farm Mechanics and Agronomy, and the securing of an assistant in agronomy.

The work in the Scientific Agricultural Course which heretofore has been somewhat disconnected, has been so rearranged as to make it consecutive. In the fall term of the Junior year the subjects of Geology and Soil Physics are taken up and carried along together, thus showing the close relations between Geology and Agriculture. The next term, Geology and Farm Crops are studied, which affords an opportunity to study the evolution of plants and animals, both before and after the advent of man upon earth. The work in Farm Mechanics which is offered in the winter term of the Senior year is a study of farm machinery including gasoline engines, windmills and pumps as well as the more common farm implements. The principles of draft, both as applied to horses and to wagons and farm implements are studied from a practical as well as a theoretical standpoint. The same term the study of Rural Economics is pursued, in which the subjects of the selection, laying out and general management of farms, arrangement and construction of farm buildings, selection and adaptation of crops and crop rotation, are treat-

ed in a thoroughly practical as well as a scientific manner. A course in Meteorology is given in the spring term following. This course is intended to give the student a thorough understanding of the methods of forecasting employed by the United States Weather Bureau.

A one-term course in the Elements of Geology is required in the Domestic Science, and Pharmacy groups, in the winter term of the Senior year; and also in the General Science Courses, if the two-term course in Geology is not elected. This is designed primarily as a culture course and is intended to give the student a broad, general, and not a merely superficial, view of the evolution of the earth and its inhabitants.

1 F.—Geology, a 5, 10:30-11:30 } Prof. Chilcott.
2 W.—Geology, a 5, 9:30-10:30 }

Pre. for 1., All required work below Sophomore year.
Pre. for 2., Gl. 1., Ph. 2 & 3 Zo. 1 & 2, B t, 1, 2 & 3.

This is a two-term course and is intended to give the student an outline of the salient features of Geology as now developed. The first term will be devoted to a consideration of geologic processes and their results, the the second term to the history of past ages. First term required, but second term not allowed in Mechanical and Electrical Engineering courses. Both terms required in Scientific Agriculture course, and may be elected in General Science course.

Chamberlain and Salisbury's Geology.

(a 2, 8:30-9:30) Prof. Chilcott.

3 F.—Soil Physics ()
(b 3, 8:00-9:30) Mr. Cole.

Pre. Ph. 4 and 5.

a, Physical properties of the soil, supply of food to the growing plant, soil moisture, soil temperature, tillage, nitrification, wells, irrigation.

b, Mechanical analysis of soils; organic matter moisture, and specific gravity determinations; capillarity and water holding capacity of various soils; measure of the flow of water and the passage of air through soils; the effect of mulching and tillage upon the conservation of moisture.

Physics of Agriculture, King; lectures, references, note-book.

4 W.—Elements of Geology, a 5, 1:15-2:15, Prof. Chilcott.

Pre. Zo. 2.

a, The history of the evolution of the earth and its inhabitants.

Le Conte's Elements of Geology, lectures, charts, diagrams, maps, notes.

5 W.—Farm Crops, a & b 5, 10:30-12:00. Mr. Cole.

Pre. 1, 2.

a, The classification, improvement, culture, harvesting, uses, history, and geographical distribution of crops.

b, Laboratory work in grain grading, cleaning and treating, and corn judging.

Lectures, and references, note-books.

6 W.—Farm Mechanics, b 2, 2:15-4:15. Prof. Chilcott and Mr. Cole.

Pre. 4.

a, Principles of draft, roads; farm motors, horse power, engines, windmills; farm machinery, friction, pumps; horse-shoeing.

b, Laboratory work with models and apparatus for measuring draft, examination and tests of farm machinery and implements.

Physics of Agriculture, King: lectures, note-books.

W.—Rural Economics, a 3, 8:30-9:30. Prof. Chilcott.

Pre. 5.

The selection, laying out and general management of

farms, farm buildings, selection and rotation of crops, fertilizers, markets, general summing up and correlation of foregoing work in agronomy.

Lectures, maps, charts, diagrams, note-books.

8 F.—Mineralogy, a 1, 1:15-2:15, b 4, 1:15-3:15. Prof. Chilcott.

Pre. 1 and 3.

a, The classification, physical and chemical properties of minerals.

b, Physical examination and blowpipe analysis.

Determinative Mineralogy and Blow-pipe analysis. Bush-Panfield.

Dana's System of Mineralogy, note-books.

9 S.—Meteorology, a 3, 1:15-2:15. Prof. Chilcott.

Pre. All required work below the Sophomore year and Ph. 4.

General Laws of meteorology and climatology, weather forecasting.

Waldo's Elementary Meteorology.

DEPARTMENT OF HISTORY, ECONOMICS AND PHILOSOPHY.

(H-P.)

DR. CHALMERS; PROF. HARDING.

The work in History and Economics is designed to give that information and training which are requisite to intelligent citizenship; to enable the students to trace the genesis and development of political institutions, and especially to awaken in him an enthusiasm for personal individual effort. Courses 1-3 should precede all work in political science, sociology, and economics. Especial effort is made in courses 1 and 2 to aid the student in acquiring habits of careful and systematic use of the material with which he works. In the more

advanced courses students are sent to original sources of information so far as possible. The topical and library methods are for the most part adopted as best calculated to develop the individual powers of the student.

The studies in Philosophy are intended to help the student form habits of close, careful and logical analysis and reasoning; to interest him in considering questions of a subjective character and those which pertain more especially to his own rational nature and the organism of the state. The work is begun by a study of Psychology from a biological standpoint. Man as an individual is first considered and then as a part of the social organism where he becomes a factor in the social and political forces of the world. Text-books are used where they are found to be of real service, supplemented by lectures and class discussions based on assigned readings and original and individual work of students.

The following courses are offered:

1 W.—General History, a 5, 8:30-9:30. Prof. Harding.
Pre. Eh. 3, Ms. 4.
a, History of Europe to the Middle ages, with brief preliminary survey of Oriental history, text-book, reference work, papers, special study of a few carefully selected sources.

2 S.—General History, a 5, 10:30-11:30. Prof. Harding.
Pre. 1.
a, Continuation of 1. Rapid survey of Mediaeval history. Emphasis upon the renaissance and reformation periods, and the rise and development of modern nations.

3 F.—English History from 1603, a 5, 8:30-9:30. Prof. Harding.
Pre. 1 and 2.
a, The political revolution, ministerial government, expansion of empire, the industrial revolution, the democratic era.

4 W.—American History, a 5, 1:15-2:15. Prof. Harding. Pre. 1 and 2.

a, Constitutional and political history of the United States from 1783 to 1829. Lectures, papers, reports, study of important documents and orations.

5 W.—American History, 1829-1865, a 5, 1:15-2:15. Prof. Harding.

Pre. 1 and 2.

a, Continuation of Course 4. The national democracy anti-slavery movement, slavery in the territories, secession and civil war. Not given in 1904-5.

6 S.—American Political Institutions, a 5, 8:30-9:30. Prof. Harding.

Pre. 1 and 2.

a, A study of the structure, nature and actual working of our governmental and political institutions, federal, state and local; the federal system, constitutional interpretation, working relations of the national and state governments, the civil service, party machinery and methods, nature and action of public opinion. Textbooks, lectures, reports. Bryce's American Commonwealth (abridged) supplemented by Hart's Actual Government and Boyd's cases.

7 F.—Municipal Government, a 3, 9:30-10:30. Prof. Harding.

Pre. 6.

a, A study of government of cities at home and abroad, legal position of the city. Comparison of American and European municipalities. Municipal corruption. Reform movements. American municipal progress. Readings, papers and reports. Reference to Shaw's Works and current literature.

8 F.—American Territorial Development, a 2, 9:30-10:30. Prof. Harding.

a, The acquisition of territory and the problems that have from time to time grown out of it. Special attention to the problems of recent expansion. At least one year of history should precede this course.

Caldwell's Territorial Development.

9 S.—Psychology, a 3, 3:15-4:15. Dr. Chalmers.

Pre. Eh. 7, and H-P. 2.

a, Study of nervous mechanism at disposal of the mind. Discussion of the various phases of mental activity. Special attention given to the cultivation of mental faculties and will power.

Halleck's Psychology and Psychic Culture.

Also selections from Witmer's Analytic Psychology.

Lectures and discussion.

10 F.—Sociology, a 3, 3:15-4:15. Dr. Chalmers.

Pre. 9.

a, This course is designed to introduce the student into the rich field of social science. He is here required to familiarize himself with the principal forms of social organizations; the thoughts, sympathies, purposes and virtues that make society possible; with the benefits society confers and the conduct that worthy membership of it requires. Such study lies at the foundation of all further consideration of social problems.

Gidding's Elements of Sociology.

Lectures and discussions.

11 F.—Comparative Politics, a 3, 1:15-2:15. Prof. Harding.

Pre. 6.

a, A comparative study of the constitutions and governments of England, France, Germany and Switzerland. Lectures, discussions, reports.

Wilson's "The State" and "Lowell's Governments and Parties of Continental Europe."

12 W.—International Law, a 5, 9:30-10:30. Prof. Harding.
Pre. 4, 5 and 6.
a, Sources of International law examined. Rights and obligations of nations connected with peace, war and neutrality. Text-book, discussions, reports.
Lawrence's International Law.

13 S.—Money and Banking, a 5, 9:30-10:30. Prof. Harding.
Pre. 4 and 6.
Functions of money; mechanism of credit; American financial history, theory and history of banking. Introductory lectures on economics. Reports, discussions, short written theses.
White's Money and Banking.

14 W.—Race Development, a 5, 10:30-11:30. Dr. Chalmers.
a, The plan of this course is to take certain types of intellectual and literary forms in their germs and trace their growth and elaboration through the more complex stages of human development.
In the Winter of 1905 the special subject of study will be the development of the English Drama, beginning with the Mystery Plays.
Text-books, lectures and assigned readings.

15 S.—Ethics and Applied Psychology, a 5, 10:30-11:30. Dr. Chalmers.
Pre. 9. 10 and 14.
a, The course in Ethics includes a study of Ethical principles, grounds of governmental authority, discussions on conduct of individuals and nations.
Hickok's Moral Science.
Course in Applied Psychology is given. Lectures and selected readings.

DEPARTMENT OF HORTICULTURE AND FORESTRY.

(Ho.)

PROFESSOR HANSEN; MR. THORNBER; MR. HARALSON.

In the regular College work these subjects are taught as an applied science as well as an art, full use being made of the student's attainments in the various sciences underlying the practice of Horticulture. The variation of cultivated plants, and the principles and methods of their development under the hand of man, are considered, as well as their propagation and cultivation.

Field and laboratory exercises emphasize the lessons taught in the class room. Ample facilities for practical illustration are offered by the eighty acres of experiment station horticultural grounds and college campus, including orchards, forestry plantations, arboretum, nursery, vegetable gardens, small fruit plantations, flower borders and ornamental grounds. The horticultural buildings contain class room, laboratory, conservatory and forcing house; grafting and potting rooms and storage cellars.

The commercial nursery course is intended as a short winter course for those desiring to engage in the business of growing trees and plants for sale, especially trees adapted to prairie conditions. Special stress is laid upon practical work in the grafting room. No examination is required for entrance to this short course.

Students desiring to make Horticulture their major subject should take courses 1-5 inclusive. All general science students should at least elect course 3. Students in Domestic Economy should take course 8 and elect course 9; students in Art should elect courses 5 and 8. Those specializing in Forestry can elect Advanced Surveying and Forestry Literature instead of Pomology and Horticultural Investigation. Those specializing in Pomology may take Horticultural In-

vestigation instead of Advanced Surveying; those desiring special preparation for Landscape Gardening should take Advanced Surveying, Horticultural Investigation and Floriculture in addition to courses 1-5.

The following work is offered:

(a 3, 8:30-9:30) Prof. Hansen.

1 F.—Horticulture, () Mr. Thornber.

(b 2, 8:00-9:30) Mr. Haralson.

a, Propagation and management of fruit and ornamental plants with special reference to prairie conditions; market and home gardening. The theory of garden operations; the relationship and physiology of plants from an horticultural standpoint. A view is taken of the entire field of Horticulture and its various divisions as a life work.

b, Practical exercises in grafting room, nursery, orchard, garden and greenhouse.

Lectures. American Horticultural Manual. Bailey's Principles of vegetable gardening.

2 W.—Pomology, a 3, 8:30-9:30. Prof. Hansen.

Pre. 1.

a, The history, management and propagation of fruits. Exercises in technical descriptions of fruits.

Lectures. Text book references.

3 W.—Artificial Evolution, a 2, 9:30-10:30. Prof. Hansen.

a, The variation of plants under the hand of man. The modification and amelioration of plants by cultivation, soil, climate, selection and hybridization. Recent theories and work in Plant-breeding.

Lectures. Darwin's Animals and Plants under Domestication; Bailey's Plant-Breeding and Survival of the Unlike.

4 S.—Forestry, a 3, 2:15-3-15. Prof. Hansen.

a, Principles of forestry, the influence of forests on cli-

mate, timber planting on the prairies, European forestry methods as modified by prairie conditions, shelter belts, the propagation, cultivation, charteristics and uses of forest trees.

Lectures. Pinchot's Primer of Forestry, Green's Forestry in Minnesota.

5 S.—Landscape Gardening, a 2, 1:15-2:15. Prof. Hansen.

a, The Beautiful in nature, gardening as one of the fine arts, historic development of the ancient or geometric, and the modern or natural styles; best ornamental trees, shrubs, and plants, hedges; lawn-making, walks and drives.

Lectures. Text book references.

6 F., W. or S.—Horticultural Investigation, b 5, Prof. Hansen.

Pre. 1-4.

b, Investigation along some special line.

7. F., W. or S.—Forestry Literature, a 5, Prof. Hansen.

Pre. 4.

a, A course of advanced reading and investigation in Forestry.

Prof. Hansen.

8 W.—Floriculture, a 2, 8:30-9:30. Mr. Thornber.
Mr. Haralson.

a, The cultivation of flowers outdoors and under glass. House Plants. Exercises in the making of boquets, wreaths and floral designs.

Lectures and text books.

Prof. Hansen.

9 W.—Home Gardening, a 3, 8:30-9:30. Mr. Thornber.
Mr. Haralson.

a, A course in home gardening for the students in the short winter course in Domestic Economy and Agriculture.

Text books, practical demonstrations and exercises.

10 W.—Nursery Handicraft, b 2, 1:15-3:15. Mr. Haralson.
Practical exercises in tree, shrub and plant propagation for the students in the short commercial nursery course.

SHORT COURSE IN HORTICULTURE.

(From Jan. 2 to March 24, 1905.)

Special Commercial Nursery Course. Lectures and practical work in commercial propagation and nursery management of fruit trees and small fruits, forest trees, ornamental trees, shrubs and plants, grafting, budding, pruning, cutting scions, packing grafts, making cuttings and stratifying seeds. All of every day.

Lectures: American Horticultural Manual, Bailey's Nursery Book, Goff's Principles of Plant Culture, Green's Amateur Fruit Growing and Forestry in Minnesota.

DEPARTMENT OF LANGUAGES.

(Ln.)

PROFESSOR WHEELER; MISS DUBOIS; PROFESSOR WERNER.

The student pursuing work along scientific or technical lines is virtually compelled to have some knowledge of either German or French, while the importance of Latin is recognized by almost everyone.

Two years of language are required for the degree of Bachelor of Science in all courses except the Mechanical, the Electrical, the Civil and Agricultural Engineering and Pharmacy. This work must be consecutive in whatever language the student elects. In such technical "majors" as Engineering,

French is advised, in most of the natural or biological sciences German will be found preferable, while in the more literary work Latin is the most suitable.

The following work in Latin, German and French is offered, Viz:

1 F.—Latin, a 5, 9:30-10:30. Miss DuBois.
Pre. Eh. 3.
a, Primary principles of the language, including inflections and easy syntax, with constant drill in the vocabulary necessary for reading Cæsar.
Bellum Helveticum.

2 W.—Latin, a 5, 9:30-10:30. Miss DuBois.
Pre. 1.
a, Continuation of 1, more attention to etymology and syntax by means of daily translations from English into Latin.
Bellum Helveticum.

3 S.—Latin, a 5, 9:30-10:30. Miss DuBois.
Pre. 2.
a, Completion of Bellum Helveticum with continuation of syntax and composition.

4 F.—Latin (Cæsar), a 5, 1:15-2:15. Miss DuBois.
Pre. 3.
a, Selections from Cæsar and Nepos, thorough study of Latin Grammar, with daily exercises in prose composition.
Arrowsmith.
Allen and Greenough's Latin Grammar.

5 W.—Latin (Virgil), a 5, 1:15-2:15. Miss DuBois.
Pre. 4.
a, Translation of books I and II of the Aeneid with special attention to rhetorical figures and mythological references as well as to scansion and different styles of Latin poetry with prose composition every day.

6 S.—Latin (Virgil), a 5, 1:15-2:15. Miss DuBois.
Pre. 5
a, Translation of books III and IV of the Aeneid with continuation of work indicated in 5.

NOTE.—In addition to the above work in Latin, the following three courses are offered for the benefit of graduate students, or others who may have the opportunity to continue

their study of this language. Hours must be arranged to suit teachers and students.

F.—Latin (Virgil), a 5, 8:30-9:30. Miss DuBois.
a, Books V and VI of the Aeneid, with daily exercises in rendering English into Latin.
W.—Latin (Cicero), a 5, 8:30-9:30. Miss DuBois.
a, Study of first, second and third of Cicero's Orations against Catiline, advanced syntax, and careful consideration of this period of Roman history.
S.—Latin (Cicero), a 5, 8:30-9:30. Miss DuBois.
a, Cicero's Orations continued, the fourth against Catiline, followed by the Manilian Law or Poet Archias with Roman history and Latin syntax.

7 F.—German, a 5, 9:30-10:30. Prof. Werner.
Pre. Eh. 3.
a, Introductory course, elementary grammar, pronunciation, elementary exercises in translating from English into German and German into English. Reading in this course will be begun early.
Lange's Method.

8 W.—German, a 5, 9:30-10:30. Prof. Werner.
Pre. 7.
a, Grammar, reading, translation of easy sentences from English into German, translation at sight and by ear, dictation exercises and memorizing of selected passages of prose and poetry. Exercises in conversation, translation of selected stories and easy poems.
Lange's Method.

9 S.—German, a 5, 9:30-10:30. Prof. Werner.
Pre. 8.
a, Continuation of course 8 with special drill on irregular verbs and idiomatic expressions. A considerable amount of easy German prose will be read in this course and the more difficult passages accurately translated.
Lange's Method.

10 F.—German, a 5, 1:15-2:15. Prof. Wheeler.
Pre. 9.
a, Grammar, derivation and composition of words, composition based on the works read. A large amount of reading on various topics selected from the works of nineteenth century writers will be done in this course. Translation at sight and by ear.

Joynes-Meissner's Grammar will be used for reference.

11 W.—German, a 5, 1:15-2:15. Prof. Wheeler.
Pre. 10.
a, Grammar, advanced study of syntax, composition, German literature of the classical period. Selections from the works of Schiller and Goethe will be read and the more difficult passages explained and translated. The lives and times of Goethe and Schiller will be discussed in the class. Rapid dictation on subjects connected with literature of this period.
Joynes-Meissner's Grammar for reference.

12 S.—German, a 5, 1:15-2:15. Prof. Wheeler.
Pre. 11.
a, Course in scientific German designed to familiarize students with the more common terms used in the sciences. Extensive reading and translation. Composition and dictation exercises on scientific subjects.
Gore's Scientific German Reader will be used as the basis of the work.

13 French, a 5, 9:30-10:30. Prof. Wheeler.
Pre. Eh. 3.
a, Grammar and special drill in pronunciation. Translation of easy English sentences into French. Elementary reading and translation.
Fraser and Squair's Grammar.
Super's Reader.

14 French, a 5, 9:30-10:30. Prof. Wheeler.
Pre. 13.
a, Pronunciation and grammar, translations into French, translations at sight and by hearing, dictation exercises, memorizing of selections of prose and poetry.
Fraser and Squair's Grammar.
Super's Reader.

15 S.—French, a 5, 9:30-10:30. Prof. Wheeler.
Pre. 14.
a, Grammar continued, idioms and syntax, study of the subjunctive mood and irregular verbs, translations at sight and by ear, memorizing of prose and poetry, dictation and conversation exercises. In this course a large amount of easy French will be read.
Fraser and Squair's Grammar.

16 F.—French, a 5, 2:15-3:15. Prof. Wheeler.

Pre. 15.

a, Continuation of course 15. Grammar, composition based upon the works read, reading and translation of a large number of selections drawn from the works of the nineteenth century writers. Dictations.

Fraser and Squair's Grammar.

17 W.—French, a 5, 2:15-3:15. Prof. Wheeler.

Pre. 16.

a, Grammar and composition. Several easy classical plays will be read and the lives of the most important writers and the customs of the seventeenth century will be discussed.

Dictations upon literary subjects once a week.

Fraser and Squair's Grammar.

18 S.—French, a 5, 2:15-3:15. Prof. Wheeler.

Pre. 17.

a, In this course a large amount of scientific French will be read and selected passages carefully translated. Translation by ear and at sight, dictation exercises on scientific subjects.

Simples Lectures sur les Sciences, les Arts et l'Industrie. Garrigues et Monvel.

In addition to the above work in French and German, students may arrange with the instructor to continue the study of either French or German for a third year. Due credit will be given for work done in these special courses.

DEPARTMENT OF MATHEMATICS AND ASTRONOMY.

(Ms.)

PROFESSOR BROWN; MR. NELSON.

The general work of this department is planned with the view of cultivating in the student habits of systematic and accurate thinking as well as of giving a knowledge of methods in dealing with the practical problems that may arise in college work and in future life. Independent effort is encouraged

to the greatest possible extent, the solution of problems and original demonstrations forming an important part of each course. In mathematics, courses 1, 2, 3, 4, 5, 6 and 7 mentioned below are required of all students.

In addition to these, other courses are offered for election, including the prerequisites required in the other departments, together with subjects designed primarily for students who may wish to pursue special work in mathematics.

In Astronomy one course is required for graduation. This is intended to give such a knowledge of the science as an educated person should possess. A course in practical Astronomy is also offered for election. The class room work of both these courses is supplemented by the use of instruments in the observatory. These include a five-inch equatorial telescope, a transit instrument, a sidereal clock and a chronograph.

The following courses are offered:

1 W.Algebra, a 5, 10:30-11:30. Mr. Nelson.
a, The fundamental operations, involution, evolution, factors and multiples.
Beman & Smith's Elements.

2 S.—Algebra, a 5, 10:30-11:30. Mr. Nelson.
Pre. 1.
a, Fractions, simple equations of the first degree, indices, complex numbers.
Beman & Smith's Elements.

3 F.—Algebra, a 5, 10:30-11:30. Mr. Nelson.
Pre. 2.
a, Quadratic equations, inequalities, logarithms, ratio, variation, proportion.

4 W.—Geometry, a 5, 9:30-10:30. Mr. Nelson.
Pre. 2,
a, Especial emphasis is laid on original solutions.
Sander's Plane Geometry.

5 S.—Geometry, a 5, 9:30-10:30. Mr. Nelson.
Pre. 4.
a, Completion of Plane Geometry.

6 F.—Solid Geometry, a 3, 9:30-10:30. Prof. Brown.

a, All the important principles of Solid Geometry will be covered.

7 W.—Trigonometry, a 5, 9:30-10:30. Prof. Brown.
Pre. 3 and 5.
a, The trigonometric functions, analytically and graphically; the use of logarithms, the solution of right and oblique triangles.
Wentworth's Trigonometry and Surveying.

8 S.—Algebra, a 5, 8:30-9:30. Prof. Brown.
Pre. 3.
a, A review of the quadratic equation, the progressions, imaginary quantities, inequalities, permutations and combinations, the binomial theorem, logarithms.

9. W.—Analytic Geometry, a 5, 8:30-9:30. Prof. Brown.
Pre 7 and 8.
a, The point, right line, the conics, the general equation of the second degree.
Nichol's Analytic Geometry.

10 S.—Differential Calculus, a 5, 10:30-11:30. Prof. Brown.
Pre. 9.
a, The differential co-efficient, the formulas of differentiation, the expansion of functions, successive and partial differentiation, indeterminate forms, tangents and normals, radius of curvature, evolutes and involutes, envelopes, maxima and minima.

11 F.—Integral Calculus, a 5, 8:30-9:30. Prof. Brown.
Pre. 10.
a, Integration as the inverse operation of differentiation, integration of rational fractions, integration by rationalization, by substitution, reduction formulas, integration as a summation, rectification of curves, areas and volumes with numerous problems.

12 W.—Analytic Mechanics, a 5, 1:15-2:15. Prof. Brown.
Pre. 11.
a, The application of analytic geometry and differential and integral calculus to the problems of mechanics. The laws of equilibrium, motion, work and energy of particles and rigid bodies.

13 S.—Analytic Mechanics, a 5, 1:15-2:15. Prof. Brown.
Pre. 12.
a. Continuation of course 13.
Lectures and references.

14 F.—Advanced Analytic Geometry, a 5, 1:15-2:15. Prof. Brown.
Pre. 10.
a, the general equation of the second degree, the analytic geometry of space, the point, plane, straight line, surfaces of the second order.

15 W.—Theory of Equations and Determinants, a 5, 10:30-11:30. Prof. Brown.
Pre. 8.

16 W.—Differential Equations, a 5, 2:15-3:15. Prof. Brown.
Pre. 12.
Johnson's Differential Equations.

17 F.—Astronomy, a 5, 10:30-11:30. Prof. Brown.
Pre. 7.
a, Astronomical instruments, astronomical co-ordinates, the earth, moon and sun; the planets, fixed stars and constellations; observations and measurements with the equatorial and the transit instruments.
Young's Manual.

18 S.—Practical Astronomy, a 3, 9:30-10:30. Prof. Brown.
Pre. 7 and 13.
a, Astronomical problems; use of ephemeris.

DEPARTMENT OF MECHANICAL ENGINEERING.

(Me.)

PROFESSOR SOLBERG; MR. TROOIEN.

The object of the work offered is to give students a thorough training in the theoretical principles underlying the science of mechanics and machines and at the same time to enable them to become practically familiar with some of the numerous applications of these principles which are of such inestimable value to the human race.

The instruction is both theoretical and practical. The usual methods of text book study and lectures are employed, but the student is required to put into practice, as far as pos-

sible, the instruction which he receives. Hence the work of the class-room is supplemented and practically exemplified by practice in shops. The student not only studies the theories of constucting and operating machinery; but in the drawing room he designs, and in the shops constructs and operates such machines. It is believed that those who complete this course will be fitted to fill responsible positions in manufacturing establishments. It is important that French be elected as the language that is required in addition to English.

The department is located in the new Engineering building. The workshops are supplied with a large variety and quantity of tools. The woodshop is furnished with twenty-five sets of carpenter tools and with eight wood-turning and one pattern-maker's lathe, a scroll saw, a combination circular saw and a 20-inch planer. There is also a variety of special tools for wood working.

The machine shop is furnished with a large number of engine lathes of different sizes, a universal milling machine, shaper, planer, tool grinder, drill grinder, drill press, emery wheels and a great variety of hand tools. The machinery is driven by a 25-H. P. Atlas Engine.

The testing laboratory is equipped with a 100,000 pound Riehle Vertical screw testing machine, and a 2000 pound cement testing machine. These together with a large variety of smaller instruments for testing work, such as indicators, planimeters and tachometers, are at the disposal of the students of the department.

Two courses in Architectural Drawing and Designing are offered. Additional work along this line will be given to students who desire it.

A large number of pictures, drawings, and illustrative material has been recently added to the equipment through the liberality of manufacturers, and friends of the college.

The following work is offered:

1 F., W. and S.—Carpentry, b 3, 1:15-3:15. Prof. Solberg.
b, Talks on the care and use of different tools. Practice at the bench in making the various joints used in wood construction.

2 F., W. and S.—Wood Turning, b 3, 1:15-3:15. Prof. Solberg.
b, Wood turning in hard and soft woods.

3. F. W. and S—Forging, b 3, 1:15-3:15. Mr. Trooien.
b. Bending, drawing, up-setting, welding and forging iron.

3c F., W. and .S.—Forging (steel), b 2, 1:15-3:15. Mr Trooien.
b, Steel manipulation, including cold chisels, punches and lathe and planer tools, tempering and hardening.

4 F., W. and S.—Machine shop, b 2, 1:15-3:15. Mr. Trooien.
b, manipulation of the various machines in turning, planing, shaping, milling, gear-cutting and tool-making.

4c F., W. and S.—Machine shop, b 3, 1:15-3:15. Mr. Trooien.
b, Construction of some machine or appliance from designs made in drawing room.

5 F., W. and S.—Mechanical Drawing, 1:15-3:15. Professor Solberg.
b, Instrumental drawing, geometrical problems, and parts of machines.
This work is offered during the entire year, and at hours convenient to teachers and students.

5c F.—Architectural Drawing, b 5, 1:15-3:15. Prof. Solberg.
Pre. Me. 5.
b, Rendered drawings of simple buildings, examples of various orders, giving facility in draughtsmanship, familiarizing students with principles.

6 F (b5)
—Machine Design, 1:15-3:15 Prof. Solberg.
W (b3)
b, Solution of various problems involving the design of simpler parts of the machine.
Klein's Machine Designs.

6c W.—Architectural Design, b 5, 1:15-3:15. Prof. Solberg.
Pre. 1 and 2.
b, Principles of planning introduced in practical problems, exercises in composition and details.

7 F.—Kinematics, b 5, 1:15-3:15. Prof. Solberg.
b, Geometry of machinery, problems in the design of mo-

tion transmitting appliances.

8 W.Engineering Design, b 5, 1:15-3:15. Prof. Solberg.
b, Solution in the drawing room of some practical problems in design and making working drawings of same.

8c S.—Engineering Design, b 5, 1:15-3:15. Prof. Solberg.
Continuation of course 8.

9 F.—Elements of Mechanism, a 5, 9:30-10:30. Prof. Solberg.

a, Elements of machinery, velocity ratios, graphic representation of speed and acceleration. Motion transmitting parts, such as gears, belts, cams, screws, link work. Automatic feeds, parallel and quick return motions. Lesigning.

Wood and Stahl.

10 S.—Steam Engine, a 5, 8:30-9:30. Prof. Solberg.
a, Study of the modern steam engine, slide valve, and when in combination with independent cut-off valves, link motion and Zeuner diagrams, reciprocating parts and indicator practice.

Holmes' Steam Engine.

11 F.—Steam Boilers, a 5, 8:30-9:30. Prof. Solberg.
a, Advantages and disadvantages of using the various forms of boilers, methods in construction, tubes and flues, plates, riveting, bracing, grate and heating surface, gauges and feed appliances, setting, care and operation.

Wilson and Flather's Steam Boilers.

12 W.—Strains in Framed Structures, a 5, 8:30-9:30. Prof. Solberg.
a, Graphical determination of stresses under action of static, moving and wind forces.

Green, Vol. 1.

13 S.—Algebra, a 5, 8:30-9:30. Mr. Trooien.
a, A special course for students in Steam Engineering.

14 S.—Strength of Materials, a 5, 9:30-10:30. Mr. Trooien.
a, Study of the strength and elastic, properties of meterials of construction, and elementary stresses of deformation in tension, compression, shearing, torsion and flexure and mechanics of beams columns and shafts.

15 F. or S.—Descriptive Geometry, b 5, 1:15-3:15. Professor Solberg.

Instruction in methods of representing by drawing all geometrical magnitudes and solution of problems relating to these magnitudes in space.

10 F. or S.—Perspective. 1:15-3:15. Prof. Solberg.
A full course in perspective is offered to those students who desire to especially fit themselves for work in architecture.

SHORT COURSE IN PRACTICAL STEAM ENGINEERING.

Modern agricultural methods have introduced in such a marked degree, the steam engine as a substitute for animal power that the consequent growing demand for steam engineers has led the college to arrange a two term course of study for the special training of steam (especially traction) engineers. Extreme care has been taken only to offer such work as shall prove valuable to the man running the traction engine or other machinery. A relatively large amount of shop work, engine repairing and engine running is introduced, with a proper proportion of recitations in closely allied subjects. Upon the satisfactory completion of this work the student is given a certificate which is virtually the same as a license in this state to run an engine.

Students who complete the work of the fall term of the preparatory department will be admitted as candidates for certificates without entrance examinations. Others are expected to pass satisfactory examinations in Arithmetic as far as the preparatory class carries that subject in the fall term. Also to read intelligently and show such general elementary training as shall indicate that they are able to understand the subjects embraced in the engineering course.

(Winter Term, January 2 to March 24.)

Arithmetic, a 5, ... 8:30- 9:30
Physics of Steam, a 5, ... 9:30-10:30
Civil Government, a 5, ... 10:30-11:30

Forging, b 3, ... 1:15- 3:15
Mech. Drawing, b 2, ... 1:15- 3:15
(Spring Term, March 27 to June 15.)
Algebra, a 5, ... 8:30-9:30
Steam Engine Lectures, a 5, ... 9:30-10:30
Elementary Physics, a 5, ... 10:30-11:30
Forging, b 2, ... 1:15- 3:15
Mech. Drawing, b 3, ... 1:15- 3:15
Engine Practice, b 5, ... 3:15- 5:15

DEPARTMENT OF MILITARY SCIENCE.

(Mt.)

CAPTAIN MCARTHUR.

This course is valuable for many reasons:

1 It gives young men an upright carriage and a confident manner that will be of material benefit to them in after life.

2 It gives them the habit of instinctive obedience to constituted authority, than which there is no quality more important.

3 Every young man however much he may be opposed to war on principle, is in duty bound to serve his country when war comes. This course enables him to render such service more valuable.

The wisdom of the Federal law requiring military instruction in land grant colleges was forcibly illustrated in the war with Spain. Students and graduates of these colleges were potent factors in putting the volunteer army into proper condition for actual service.

The General government, desiring to encourage military study at colleges, generously furnishes a regular army officer as professor of military science and tactics, and in addition offers the following inducements to students:

1. Members of the battalion holding the highest standings for general excellence in the entire course as hereafter outlined will, upon graduation, be reported to the adju-

tant general of the United States Army who will publish their names in the army register. From this list officers are selected by appointment of the president of the United States for volunteer service in case of war.

2 Graduates who have satisfactorially completed the prescribed military course may take an examination and on satisfactory evidence of ability their names will be placed upon a roll from which officers will be selected in time of war.

3. Graduates who have satisfactorily completed the prescribed military course may, on the recommendation of the governor of the state, attend any of the United States army service schools. The General Government will pay transportation both ways furnish quarters and allow one ($1) dollar per day for subsistence during attendance.

COURSE OF INSTRUCTION ADOPTED IN ACCORDANCE WITH REGULATIONS OF THE WAR DEPARTMENT.

All Cadets are divided into three classes as follows:

1st Class—Juniors and Seniors.

2nd Class—Freshmen and Sophomores, with such other students as are of about equal academic rank.

3rd Class—Preparatory and Sub-Freshmen Cadets and others of about equal academic rank.

The 2nd and 3rd classes will be required to take the full military course. The 1st class will be required to take the course of lectures and will be examined on the subjects covered. Cadets of this class may elect to take the full course, and all may be required to turn out for unusual or great events when directed by the commandant and approved by the president.

Cadet officers, Sergeants, and N. C. S. will be selected from the first and second classes.

Cadet Corporals from the third class.

FALL TERM—PRACTICAL—ALL.

Drills—Squad, company and battalion—close and extended order.

Guard, advance and rear guard and outposts, marches.

Ceremonies—Guard mount, inspection, review, parade.

1st Class, Field Engineering, elements.

2nd Class, Military Topography.

3rd Class, Signaling, flag.

WINTER TERM—PRACTICAL—ALL.

Outside—Company and Battal. drills } When weather per-
Guard, Reconnoissance, } mits.

Inside—Company, squad drill, bayonet exercise.

Military gymnastics.

First aid to the injured.

WINTER TERM—(Continued)—THEORETICAL.

1st Class—Records and papers, Field Engineering, Army Regulations, Lectures.

2nd Class—Firing Regulations, Military Topography, Lectures.

3rd Class—Drill Regulations, Guard Manual.

SPRING TERM—PRACTICAL—ALL.

Company and battalion drills, guard duty, practice marches, target practice.

Ceremonies—Guard mount, inspection, review, parade, escort of colors.

Camp—Advance and rear guard, outpost, camp sanitation, cooking.

Solution of problems in minor tactics.

1st Class—Field Engineering (Continued.)

2nd Class—Military Topography (Continued.)

3rd Class—Signal, Heliograph and Telegraph.

DEPARTMENT OF MUSIC AND PHYSICAL CULTURE.

(Mu.)

MISS WESTON; MISS VAUGHAN; MR. MANN.

This department at present occupies the basement of the North building.

Any student taking special work in music must pursue whatever courses in other departments the faculty may think best unless a request from parents or guardian is received asking that the student be excused from this additional work. No major can be taken in this department; however, work above the second grade (see below) in both vocal and instrumental music can be selected as counting towards a degree, according to the general rules.

A special fee of TEN DOLLARS per term will be charged all those who take music, either vocal or instrumental. This will cover both tuition and rental of instrument.

Two lessons of thirty minutes each are given per week as the required amount of instruction needed. Pupils are expected to practice two hours each day.

Instruction and practice hours are arranged by the professor and absence from either treated the same as from any other college exercise.

Music students are expected to take part regularly in the public recitals arranged, as in no other way can they secure that self control and confidence so necessary and valuable in a musical education.

For the convenience for those who wish to make a specialty of music, the instruction offered is here set forth in grades. The studies thus arranged are intended to give a broad and thorough musical education based not only on the classic masters, but embracing the best works of modern composers.

PIANO MUSIC.

Practice in note writing, ear training, etc., is begun in the first grade. Theory of Music is taken up with grade III, followed by Harmony and Musical History with grades IV and V. This work is taken in class.

Those who complete successfully the first four grades in piano music, theory of music, one year of harmony, and give a public recital, will be given a certificate in music.

Students who complete all of the grades in piano work, two years of harmony, history of music, and give a public recital, will be given a diploma in music.

GRADE I.

Position of hands, National Course of Music.
Duvernoy, Czerny, touch and Technic.
Schumann's Studies for the Young.

GRADE II.

Mathew's Graded Studies, Czerny, Schmidt.
Loeschhorn, Heller, Bertini. Touch and Technic.

GRADE III.

Clementi, Kulau, Heller, Bach, Czerny, Haydn.
Chopin's Valses, Zwintscher.

GRADE IV.

Bach, Clementi, Cramer, Chopin, Mozart, Mendelssohn.
Kullak, Zwintscher, Tappert's School for left hand.

GRADE V.

Bach, Moscheles, Beethoven, Compositions of Schubert.
Chopin, Handel, Schumann, Rubinstein, Greig, Liszt.
Weber.

VOICE CULTURE.

Pupils who complete the three grades below, together with theory of music and one year of harmony and give a public recital, will receive a certificate in music. To obtain a diploma

two years of harmony and one year of history of music will be required.

The work is as follows:

GRADE I.

Placing the voice, correct breathing, exercises for tone production and attack, technical and other studies to suit the voice, Sieber, Op. 94 eight measure vocalises, Marchesi, twenty elementary vocalises, etc.

GRADE II.

Concone, Marchesi, Sieber, exercises in interpretation and expression, tone placement, songs.

GRADE III.

Sieber, Concone, Panofka, study of larger forms of execution songs from Schumann, Schubert, Rubinstein, ballads and sacred songs.

VIOLIN MUSIC.

In this work the following is offered:

GRADE I.

Position, scale studies, exercises in bowing, Brayley's easy scale and finger exercises, Wohlfart op. 38, Easiest beginning, David's Violin School Part I, DeBeriot's School Part I, easy duets and solos.

GRADE II.

Hoffman, School Part II, Kayser, Etudes, Op. 20, Hermann's School Part II, Dancla's Petetes Airs Varie, Pleyel's duets, Mazas, Op. 36, Part I Etudes speciales, solos.

GRADE III.

David's School Part II, Schradieck Technic of violin playing. Deberiot's School Part II. Kayser Etudes Bk. III. Etudes by Deberiot, Dancla, Mazas and others. Solos by Raff, Hermann, David, Deberiot, Dancla, Bohm, Schubert, Wieniaski, etc.

VOCAL MUSIC.

Choral Union.

In connection with this department a Choral Union is maintained, and meets one evening each week throughout the year. The object of this organization is the study of choruses, glees, oratorios, etc. This work is invaluable to students who are interested in vocal music and especially so to those who cannot take a regular musical course.

When there are a sufficient number who desire it, arrangements will be made also for a beginning class in sight singing.

PHYSICAL CULTURE.

Regular physical exercises are required of all and most excellent provision is now made for both sexes to secure systematic development of body and graceful carriage through indoor and field exercises.

This work is under careful and efficient supervision. A medical director has charge of the gymnasium exercises, and an experienced athletic trainer of all field sports.

Both sexes have well equipped gymnasiums. Girls are required to take regular class work in free movements with the dumb-bells and clubs and such other exercises as belong to indoor gymnastics according to requirements fully set forth in Part Two.

ELOCUTION.

The first year's course in Elocution covers all the essentials of a technical education for teacher or public reader.

TOPICS.

Culture of the Speaking, Voice.
Quality of Tone, Force.
Articulation, Pitch.
Physical Culture, Time.

Breathing, Volume.

Elements of Gesture, Melody, Analysis.

Reading and Recitations.

The second year's course is the perfecting of the first year's work by advanced practice, leading away from the general to the individual study.

Care is taken to unfold the student's powers of observation and imagination, and preserve his individuality. Therefore, private instruction occupies an important place in the course.

Hours for private instruction will be arranged to suit the convenience of the pupil.

CLASSES IN CRITICISM.

In these classes students who receive private instruction are required to recite monthly. Criticism from students and teacher follows each recitation.

Elocution students are expected to take part regularly in the public recitals.

DEPARTMENT OF PHARMACY.

(Py.)

PROFESSOR WHITEHEAD.

This work is intended, primarily, to thoroughly teach young men and women the science of pharmacy. The courses of the Sub-Freshman year are required as pre-requisites for entrance.

The student may, on completion of the courses of Freshman and Sophomore years of the Pharmacy course given on page 85 receive the degree of Pharmacy Graduate (Ph. G.). This is the only work of the kind offered in the state and receives the hearty commendation of the state board of Phar-

macy. This line of work offers many inducements to young men, the requests of the druggists of the state for graduates of the department being far in excess of the supply.

For the student intending to take up the study of medicine or dentistry, or who wishes to prepare himself to teach the sciences in the high schools of the state, a continuation of the work of this group to the completion of the Junior and Senior years is recommended. On the completion of the group the student may receive the degree of Bachelor of Science.

1 F.—Scientific Latin, a 5, 9:30-10:30.
Pre. Eh. 4.
a, Subject is taught with special reference to its application in pharmacy. The vocabulary employed is strictly pharmaceutical.
Robinson's Grammar of Pharmacy and Medicine, first 80 pages.

2 F.—Pharmacy, a 5, 10:30-11:30.
Pre. Ch. 3.
a, Forms and uses of Pharmaceutical apparatus, weighing by apothecary and metric systems, specific gravity of solids and liquids, heating apparatus, determination of boiling and melting points, distillation, comminution, solution, precipitation, filtration, crystallization, percolation and pharmaceutical problems.
Remington's Practice of Pharmacy.
Oldberg's Pharmaceutical Problems.

3 W.—Pharmacy, a 5, 9:30-10:30.
Pre. 2 and Ch. 4.
a, Study of official medicines, waters, syrups, mucilages, mixtures, spirits, elixirs, liniments, infusions, tinctures, fluid extracts, oleoresins, extracts and official inorganic salts and compounds.
Remington's Practice of Pharmacy.

4 ...—Pharmacy, b 5, 10:30-12:00.
Pre. 2 and Ch. 4.
b, Preparation of waters, syrups, mucilages, etc., mentioned in course 3, and must be taken in connection with it.
Remington's Practice of Pharmacy.

5 S.—Pharmacy, a 5, 9:30-10:30.

Pre. 3 and 4.
a, Solutions, emulsions, powders, pills, ointments, plasters; reading prescriptions.
Remington's Practice of Pharmacy.

6 S.—Pharmacy, b 5, 10:30-12:00.
Pre. Py. 3 and 4.
b, Compounding of prescriptions, making of solutions, emulsions, powders, pills; reading and compounding prescriptions. Must be taken same term as course 5.
Remington's Practice of Pharmacy.
Ruddiman's Incompatibilities in Prescriptions.

7 F.—Materia Medica, a 5, 8:30-9:30.
a, Medicinal properties, doses and poisonous effects of the various medicines, together with the antidotes which the pharmacist may be required to administer in an emergency will receive full and careful treatment.

8 W.—Materia Medica, a 5, 8:30-9:30.
Pre. 7.
a, Continuation of course 7.
Wilcox and White.

9 S.—Materia Medica, a 5, 8:30-9:30.
Pre. 8.
a, Continuation of courses 7 and 8.
Wilcox and White.

10 S.—Drug Assaying, b 5, 1:15-3:15.
Pre. 3 and 4.
b, The drug assaying consists mainly in acquiring knowledge and practice in the preparation of official tests and volumetric solutions and the quantitative determination of the alkaloids found in some of the crude drugs. A short course in urine analysis is given in connection with drug assaying.
Pharmacopœia.
Lyon's Pharmaceutical Assaying.
Schimp's Volumetric Analysis.

DEPARTMENT OF PHYSICS AND ELECTRICAL ENGINEERING.

(Ph.)

PROFESSOR MATHEWS; MR. HOY.

The various courses offered by this department are designed for four classes of students:

FIRST: Those desiring a scientific training where physics is necessary as a foundation subject.

SECOND: Those expecting to gain some knowledge of the principles of physics and to fit themselves as teachers of science in our high schools.

THIRD: Those wishing to make physics their major subject.

FOURTH: Those desiring to fit themselves for Electrical Engineers.

From the fact that physics is one of the foundation sciences and that a knowledge of its laws is necessary to every student seeking a scientific training, the department has been well fitted with rooms and appliances to provide this training. Its lecture rooms are well provided with arm-rest chairs. The laboratories are well lighted and provided with non-vibratory piers. Water, gas and electricity are provided for the recitation rooms, the dark room and laboratories.

This department is housed in the engineering and physics building. Its facilities for instruction are equal to those of any in the Northwest.

The laboratory equipment includes such expensive pieces as analytical balances, laboratory clock making electrical contact every second, spectroscope, microscope, photometers, stereopticon (arc light), Carhart-Clark standard cells, several different types of dynamos, electro-motor, galvanometers, storage battery, induction coils ammeters, magnetometers, voltmeters,

Wheatstone briages, polariscope, quadrant electrometer, lathes, and wireless telegraphy and X-Ray apparatus.

A desirable arrangement of work for those who wish to take electrical enginineering is shown on page 83. The fol **lowing is the list and descriptions of the courses offered in this department.**

1 F.—Elementary Physics, Prof. Mathews.
{a 3, 9:30-10:30}
{b 2, 1:15- 3:15}
Pre. Ms. 2.
a, Properties of matter, mechanics of solids, and mechanics of fluids.
b, Laboratory work showing principle phenomena and proving laws governing them in properties of matter,, mechanics of solids and mechanics of fluids.
Carhart and Chute's High School Physics.
Chute's Practical Physics—Laboratory Manual.

2 W.—Elementary Physics, Prof. Mathews.
{a 3, 8:30-9:30}
{b 2, 8:00-9:30}
Pre. 1.
a, Heat, sound and light.
b, Laboratory work in heat, calorimetry, velocity of sound, color, refraction and reflection of light.
Carhart and Chute's High School Physics.
Chute's Practical Physics—Laboratory Manual.

3 S.—Elemetary Physics, Prof. Mathews.
{a 4, 10:30-11:30}
{b 1, 1:15- 3:15}
Pre. 2.
a, Electricity and Magnetism.
b, Magnetism, static electricity, arrangement of batteries, detection of the electric current and its direction, induced currents and measurements of electrical resistances.
Carhart and Chute's High School Physics.
Chute's Practical Physics—Laboratory Manual.

4 F.—General Physics, Prof. Mathews.
{a 3, 8:30-9:30}
{b 2, 8:00-9:30}

Pre. 1, 2, 3 and Ms. 7.
a, Mechanics of solids and fluids and heat with numerous examples.
b, Exact measurements of mass, distance, time, calorimetry etc.
Hastings and Beach.
Austin and Thwing.

5 W.—General Physics, Prof. Mathews.
{ a 3, 10:30-11:30 }
{ b 2, 1:15-3:15 }
Pre. 4.
a, Electricity and its applications in the dynamo, motor and transformer, electric light and study of electrical and magnetic fields.
b, Laboratory work on topics mentioned in (a).
Hastings and Beach.
Austin and Thwing.

6 S.—General Physics. Prof. Mathews.
{ a 4, 8:30-9:30 }
{ b 1, 8:00-9:30 }
Pre. 5.
a, Nature and velocity of sound, refraction and reflection of light, interference and color.
b, Laboratory work on topics mentioned in (a).
Hastings and Beach.
Austin and Thwing.

7 F.—Advanced Physics, Prof. Mathews.
{ a 3,10:30-11:30 }
{ b 2, 1:15- 3:15 }
Pre. 6, Ms. 7 and 11.
a, Mechanics, kinematics, kinetics, mechanics of fluids, and heat and its applications.
b, Laboratory work and measurments covering topics mentioned in (a).
Nichols and Franklin, Vol. I.
Nichols' Laboratory Guide.

8 W.—Advanced Physics. Prof. Mathews.
{ a 3, 9:30-10:30 }
{ b 2, 1:15- 3:15 }
Pre. 7.
a, Magnetism, electricity, electrolysis, induction currents, primary batteries, electric oscillations and waves.

b, Laboratory work on topics of (a).
Nichols and Franklin, Vol. II.
Nichols' Laboratory Guide.

9 S.—Advanced Physics, Prof. Mathews.
{a 4, 9:30-10:30
{b 1, 1:15- 3:15.
Pre. 8.
a, Nature and motion of sound, physical theory of music, nature and propagation of light, refraction, reflection, interference, color and polarization.
b, Laboratory work on topics of (a).
Nichols and Franklin, Vol. III.
Nichols' Laboratory Guide.

10 F.—Heat, Prof. Mathews.
{a 3, 3:15-4:15
{b 2, 1:15-3:15
Pre 7 and Ms. 11.
a, Sensible and latent heat, dynamical generation of heat, thermometry, calorimetry, specific heat, atomic and molecular heat capacities, evaporation, ebullition, vapor densities, cooling, diathermacy, conductivity and dynamical equivalent of heat.
b, Laboratory work covering topics mentioned in (a).
Preston's Theory of Heat.
Maxwell's Heat.

11 W.—Sound, Prof. Mathews.
{a 3, 3:15-4:15
{b 2, 1:15-3:15
Pre. 9 and Ms. 11.
a, A mathematical study of sound and the theory of music.
b, Advanced laboratory work in sound.

12 S.—Light, Prof. Mathews.
{a 3, 3:15-4:15
{b 2, 1:15-3:15
Pre. 9 and Ms. 11.
a, Shadows and images, spectrum, velocity of light, color, phosphorescence, fluorescence, diffraction, measuring waves, prisms and polarization.
b, Laboratory work along same line as (a).
Preston's Light.

13 F.—Electricity and Magnetism, Mr. Hoy.

{a 3, 1:15-2:15
{b 2, 1:15-3:15
Pre. 6 and Ms. 11.
a, Magnetism, static electricity, electric capacity, magneto-motive force, electro magnets, electrodynamometers, grouping of cells, methods of measuring magnetism, current strength, voltage and resistance, thermo-electricity, dynamos, alternators, accumulators and transformers.
b, Laboratory work on the above topics.

14 W.—Dynamo Electric Mach., Mr. Hoy.
{a 3, 10:30-11:30
{b 2, 9:30-11:30
Pre 13 and Ms. 11.
a, Theory, magnetic circuit, equation and computation of parts of dynamo, construction of armature and field magnets and types of dynamos.
b, Computation and construction of parts of small dynamos

15 S.—Dynamo Electric Mach., Mr. Hoy.
{a 3, 1:15-2:15
{b 2, 1:15-3:15
Continuation of course 14.

16 F.—Alternating currents, Mr. Hoy.
{a 3, 9:30-10:30
{b 2, 1:15- 3:15
Pre. 15 and Ms. 11.
a, Theory of alternating currents, and the study of dynamos, motors, transformers, etc.
b, Laboratory work on topics of (a).
Jackson's Alternating Currents.

17 W.—Elec. Light and Power Distribution Mr. Hoy.
{a 3, 8:30-9:30
{b 2, 8:00-9:30
Pre. 16 and Ms. 11.
a, Electric lighting, methods of wiring, efficiency of transmission, cost of material and construction.
b, Laboratory work on topics of (a).

18 S.—Design of Power Stations. Mr. Hoy.
{a 3, 8:30-9:30
{b 2, 8:00-9:30
a, Location of Power Plant. Best arrangements of machinery to conserve cost, space, etc.
b, Drawing room work in designing.

(sp.), Ph. S.—Engineering Physics, a 5, 10:30-11:30. Mr. Hoy. Topics selected and discussed in elementary physics of particular value to those taking the short course in Steam Engineering.

PREPARATORY DEPARTMENT.

(Pr.)

MR. FORSEE.

The work in this department is prerequisite to all the other courses offered. Standings from the public schools in the state, at the discretion of the principal of the department, may be accepted, and due credit given for the same grade of work completed therein. The students of this department are under the immediate charge of an experienced member of the faculty, who superintends the methods of work, and strives to secure the forming of correct habits of work and life on the part of all. Students will not be admitted to this department unless they show sufficient development and training to carrry the work offered.

A class in Elementary Algebra will be former at the beginning of the Fall term and continue their work throughout the year.

The Franklin Literary Society is made up entirely of preparatory, sub-freshman and short-course students.

The following courses are offered:

FALL TERM.

1 Arithmetic, a 5, 9:30-10:30.
Pre. Arithmetic to Percentage.
a, All the applications of percentage, analysis, rates and proportion, involution and evolution, mensuration, general review.
Milne's Standard Arithmetic.

2 English, a 5, 10:30-11:30.

Pre. A fair knowledge of Elementary Grammar.
a, Technical Grammar.
General Review of Etymology, including analysis, parsing and construction of sentences. Syntax.
Baskerville and Sewell.

3 History, U. S., a 5, 1:15-2:15.
Pre. A general knowledge of the early history of the U. S.
a, Revolutionary war and the war of 1812. The industrial development of our country, the long struggle with slavery, the indestructibility of the Union, the economic struggle, the growth of the northwest.
west.
Montgomery's Leading Facts.

4 Bookkeeping, a 5, 8:30-9:30.
a, Single and double entry sets in actual business.
Benton's High School Edition.
Military, 5, or Physical Culture, 2.

11 Orthography, a 2.

WINTER TERM.

Ms 1 Algebra, a 5, 8:30-9:30.
For description of work see Ms. 1, Department of Mathematics.

5 English, a 5, 9:30-10:30.
a, Practical applications of Course 2 from Fall Term's work, such a choice of words, meaning of words, preferred usages of words, according to best authorities.
Buehler's Practical exercises.

6 Civics, a 5, 1:15-2:15.
a, General principles of government, state government, branches of government, the national government, principles of law, municipal law, international law, completion of Young's Civics.
Young's Government Class Book.
Bookkeeping, a 5, 2:15-3:15.
a, Repetition of Course 4. May be taken by those who did not take the work during the Fall Term.
Benton's High School.
Military 5, or Physical Culture 2.

12 Orthography, a 2.

SPRING TERM.

8 Elementary Physiology, a 5, 1:15-2:15.

a, The anatomy of the chief structures of the human body and their physiology.
Colton.

9 English Interpretation, a 5, 8:30-9:30.
Pre. 2 and 5.
a, Continuation of Course 5. The class will take up higher work in preparation for Eh. 1. Exercises will consist of such work in construction and composition as may be required by the instructor in charge.

Ms 2. Algebra, a 5, 10:30-11:30.
For description of work see Ms. 2, Department of Mathematics.

10 Physical Geography, a 5, 9:30-10:30.
a, Physiography of United States.
Gilbert and Brigham.

13 Orthography, a 2.
Military 5, or Physical Culture 2.

SUB-FRESHMAN YEAR.

The work of this year is required for admission to the Commercial department and to the regular College courses. It includes subjects which no student can we.. omit, however technical a training is desired. These courses serve as a foundation upon which the higher work is based, and so taught as to stimulate the desire of the student towards this broader education. At the same time the work is thoroughly practical to every walk of life.

FALL TERM.

El. Physics (Ph. 1, a 3 b 2) 8:00- 9:30
Algebra, (Ms. 3 a 5) 9:30-10:30
Rhetoric, (Eh. 1, a 5.) 10:30-11:30
Carpentry (Me. 1, b 3.) or
F. H. Drawing (Ar. 1, b 3.) 1:15-3:15
Military, 5 or Physical Culture, 2 3:15-4:15

WINTER TERM.

El. Physics (Ph. 2, a 3 b 2.) 8:00- 9:30
Geometry (Ms. 4 a 5.) 9:30-10:30

Rhetoric (Eh. 2, a 5.) 10:30-11:30
Carpentry (Me. 1 b 3.) or
Cooking (Ds. 13 b 2.) or
F. H. Drawing (Ar. 1, b 3.) 1:15-3:15
Military, 5 or Physical Culture, 2 3:15-4:15

SPRING TERM

American Literature (Eh. 3, a 5.) 8:30- 9:30
Geometry (Ms. 5, a 5.) 9:30-10:30
El. Physics (Ph. 3, a 4, b 1.) 10:30-11:30
Rhetoric (Eh. 3, a 3.) 2:15- 3:15
Military, 5 or Physical Culture 2..... 3:15-4:15

DEPARTMENT OF ZOOLOGY AND VETERINARY MEDICINE.

(Zo.)

DR. MOORE; MR. EDGAR.

The zoological department is equipped with microscopes, dissecting instruments, sliding microtome, imbedding apparatus, incubators, autoclave, sterilizers, fossils, models, charts, specimens etc.

The veterinary department occupies a separate two-story building with a hospital in connection. The operating room is furnished with an operating table, hobbles, slings, and instruments for surgical work. Free clinics are held each Saturday at which the veterinary students assist and perform operations under the direction of the instructor. By a judicious selection of courses in this and other departments students expecting to enter schools of veterinary and human medicine can secure an equivalent to the first year's work in these institutions.

The following courses are offered:

1 F.—Invertebrate Zoology. Mr. Edgar.
)a 3 10:30-11:30(
(b 2 10:30-12:00)
a, Morphology, development, physiology and classification of invertebrates.
b, Dissection of selected forms of invertebrates.
Jordan and Kellogg, Animal Life.
Jordan and Heath, Animal Forms.

2 Vertebrate Zoology. Mr. Edgar.
)a 2 10:30-11:30(
(b 3 10:30-12:00)
)a 2 1:15- 2:15(
(b 3 1:15- 3:15)
Pre. Zo. 1.
a, Continuation of course 1. Animal relations and distribution.
b, Dissections, microscopical examinations of tissues, and of larval and embryonic forms.

3 S.—Physiology. Mr. Edgar.
)a 4 8:30-9:30(
)b 1 8:00-9:30(
Pre. Zo. 2; Ch. 3; and Ph. 3.
a, Physiology of the Cell. Special physiology of circulation, respiration, digestion, absorbtion, metabolism, excretion and sensation.
Lectures, recitations, demonstrations.
b, Laboratory work.
Huxley & Lee.

4 W.—Anatomy and Physiology of the Nervous System. Mr. Edgar.
) a 2, 3:15-4:15 (
(b 1, 3:15-4:45)
Pre. Zo. 3.
a, Development, comparative anatomy and physiology of the nervous system of vertebrates with special reference to man.
b, Dissections and microscopical examinations.

5 F.—Anatomical Methods. Dr. Moore.
) a 3, 10:30-11:30 (
(b 2, 10:30-12:00)

Pre. Zo. 1.
a, discussion of general morphology, osteology, arthrology, splanchnology and myology.
b, Study of a selected number of bones,, dissection of joints viscera and the muscles of the cat's arm.

6 W.—Anatomical Methods. Dr. Moore.
{ a 3, 9:30-10:30 }
{ b 2, 9:30-11:30 }
Pre. Zo. 5.
a, The vascular, lymphatic and nervous systems.
b, Dissections.

7 F.—Vertebrate Histology. Mr. Edgar.
{ a 1 1:15-2:15 }
{ b 4, 1:15-3:15 }
Pre. Zo. 1 and 2, or Zo. 5 and 6; Ch. 3; Ph. 3.
a, Recitation, lectures and references.
b, Preparation and examination of tissues and organs.
References: Wilson, The Cell: Bœhm-Danidoff-Huber, Piersol, Gage and Kingsbury.

8 W.—Vertebrate Histology and Embryology. Mr. Edgar.
{ a 4, 8:30-9:30 }
{ b 1, 8:00-9:30 }
Pre. Zo. 7.
a, Continuation of course 7, preparation and study of chick embryo and other forms.
References, Minot's Laboratory Embryology; Foster and Balfour, McMurrich, Marshall, etc.

9 F.—Bacteriology. Mr. Edgar.
{ a 3, 8:30-9:30 }
{ b 3, 8:00-9:30 }
Pre. Ch. 4.
a, Lectures and recitations.
b, Laboratory methods and technique.
Frost's Laboratory Bacteriology.

10 F., W., S.—Dairy Bacteriology, a 2, 3:15-4:15. Mr. Edgar.
a, Lectures, recitations and demonstrations with special reference to the dairy industry.
Russell's Dairy Bacteriology.

11, 12, 13, 14, 15, 16. F., W., S.—Veterinary Anatomy, a and b 5, 1:15-3:15. Dr. Moore.

Conducted as far as possible by the laboratory method with frequent quizzes. This can be elected as a full course throughout two years.

17 S.—Veterinary Physiology, a 5, 8:30-9:30. Dr. Moore.
Pre. Zo. 2; Ch. 3; Ph. 3.
a, The principles of physiology as applied to the domestic animals.
F. Smith's Manual of Veterinary Physiology.

18 F.—Principles of Horseshoeing, b 2, 2:15-4:15. Dr. Moore.
Anatomy of the foot, its care and preparation, fitting of shoes; normal and pathological shoeing.

19 W.—Veterinary Medicine, a 3, 2:15-3:15. Dr. Moore.
Pre. Zo. 13. Diseases of the locomotory apparatus.

20 S.—Veterinary Medicine, a 3, 2:15-3:15. Dr. Moore.
Pre. Zo. 13. Diseases of the digestive system.

21 F.—Veterinary Medicine, a 5, 1:15-2:15. Dr. Moore.
Contagious and infectious diseases with special reference to their eradication and control.

22 W.—Veterinary Medicine, a 3, 8:30-9:30. Dr. Moore.
Animal parasites, their life history, treatment and control.

23 W.—Veterinary Medicine, a 5, 3:15-4:15. Dr. Moore.
This course has been designed for the short course students in Agriculture and includes a discussion of the common diseases of farm animals.
Reynolds, Veterinary Studies.

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